

Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Story of the Week

Age of Miracles
Rapidly of Travel
Accelerates Astoundingly
Mass Destruction
Food and Stuff
Technology Has
No Morals

Story of the Week

When Alan Villiers sails the *Mayflower II* (replica of the historic Pilgrim vessel) into Plymouth harbor, there will be appropriate ceremonies, natch. Not on the official program, however, may be some "Indian" greeters whose plan pleases us no end.

According to Duke Hildreth of Westinghouse several teenagers who summer regularly in that neighborhood have procured canoes and Indian garb. Upon arrival of the *Mayflower II* they plan to paddle out and unfold a large banner reading: "WHITE MAN GO HOME."

Age of Miracles

Three well-paid speakers embellished the 1957 annual meeting of the Air-Conditioning & Refrigeration Institute at Hot Springs. One laid the biggest egg within memory of oldest members of the club. Another was . . . well, another speaker. Let us say "adequate."

But J. Lewis Powell, a self-humbling "bureaucrat" from the Office of the Secretary of Defense, knocked everybody for a loop. He spoke without notes, he pretended no speaking "polish" or style—and he fascinated the entire crowd.

His topic was the fabulous acceleration of scientific progress within recent years. In this foreshortened space, "Dope" can't begin to convey his full story. Herewith, however, is a high-point condensation we hope you'll find edifying. Cold type, of course, doesn't do justice to his ingratiating platform personality—nor are these notes anywhere near adequate or complete. No quotation marks are used, because he said everything much better than the scanty and hasty reconstruction which follows.

Rapidity of Travel

Accelerates Astoundingly

A horse can run 30 to 34 miles per hour. In 1500 B.C., and 30 centuries afterward (when Columbus discovered America) the speed at which man could travel was still

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Gas Industry Acts

Doubles Funds To Speed Cooling Research

NEW YORK CITY—The gas industry has taken direct action to speed research and development of gas air conditioning equipment "at the earliest possible moment," the American Gas Association has announced.

To achieve this purpose, the PAR Committee of the association decided to double the funds available to the gas air conditioning work during the current year. In addition to the allocation of \$375,000 already budgeted for 1957, PAR is raising an additional \$375,000 for program intensification.

Commenting on the revised program of the Task Force for Air Conditioning, Leon Ourusoff,

chairman of the group, said: "Until now AGA has concentrated its efforts in the gas air conditioning field on what might be termed fundamental projects and processes in the knowledge that manufacturers in the industry were at work on systems which might result in more immediately marketable devices."

"The anxiety of our industry to have more air conditioning equipment available for market, however, has led to a change in philosophy. It is now our plan

(Concluded on Back Page, Col. 3)

NBBB Asks Mfrs. To Correct Ad List Price Abuse

NEW YORK CITY—Kenneth B. Willson, president of the National Better Business Bureau, announced that major appliance manufacturers "are being rallied in a concerted effort to correct voluntarily an advertising abuse which is draining advertising of public believability—the use of fictitious list prices."

As an initial step in its broad program "to restore integrity to price comparison advertising," the NBBB has recommended to major appliance manufacturers that the use of all false, fictitious, exaggerated, or otherwise misleading or deceptive list prices be avoided.

It also has recommended that if any price or suggested price

(Concluded on Back Page, Col. 1)

UsAirco Bares Merger Details

PHILADELPHIA—If the proposed merger between United States Air Conditioning Corp. and Hughes-Keenan Corp. is not approved, UsAirco must "repay the advances" from H-K "within 10 days," it was disclosed here last week.

Details of the merger agreement with the Delaware, Ohio truck body maker were made public by UsAirco in the proxy statement for a special shareholders meeting called for May 29 to vote on the planned consolidation.

H-K has already advanced the

(Concluded on Back Page, Col. 1)

New Freeze-Drying Tests Hold Foods Indefinitely at Room Temperature

PITTSBURGH—A major step forward in the technique of "freeze-drying" foods so that they can be stored indefinitely without refrigeration was reported recently by Dr. David A. Copson, manager of Raytheon Mfg. Co.'s food laboratory.

Dr. Copson told the Institute of Food Technologists convening here that Raytheon's scientists are using radar's electronic energy to preserve fresh and cooked foods indefinitely at room temperature.

Still in the laboratory stage, the new process removes 70 to 95% of the fresh food's weight—it's water content—by applying microwave energy while the food is held under vacuum at below freezing temperatures.

When food is needed, it is restored to its original fresh condition in minutes by immersing in water. It then cooks in any ordinary way, according to Dr. Copson.

Raytheon's technique is believed to be more efficient than earlier freeze-drying methods, he asserted. The microwave energy by-passes the already dried portions of foods and follows the receding ice volume to the center of the food.

As the food dries, he explained, it becomes an efficient insulator. In conventional freeze-drying techniques, he added, the heat has to overcome this barrier. High surface temperatures needed may damage the product.

CRMA Members See '57 Holding Close To '56

Small Store, Food Service Needs Cited

LOS ANGELES—Members of the Commercial Refrigerator Manufacturers Association assembled here May 2 and 3 as guests of the Weber Showcase & Fixture Co., agreed after hearing the "evidence" that despite a 9% drop in shipments for the opening quarter, 1957 as a whole should compare favorably with last year's record volume.

Among the factors responsible for the slowup, the discussions emphasized, are a continuing scarcity of capital for financing large supermarket projects, and the fact that in many areas such facilities have been over-built to the extent that new ventures must mark time until population catches up.

On the bright side, it was pointed out, there is a growing awareness on the part of the independent small-store operator that he must modernize or expand if he is to survive in the ever-keener struggle for the consumer's food dollar. More business has been received from this segment of the industry's market in the last six months or

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ARI Reports Big Central Units' Value Up In '56

WASHINGTON, D. C.—Installed cost of central-station air conditioning systems which went into operation in large office buildings, stores, and similar applications in the United States during 1956 is estimated at \$556,670,000, it is reported by the Air-Conditioning & Refrigeration Institute.

This is \$122 million above the revised estimate for 1955, and almost \$200 million over 1955, according to ARI's Air-Conditioning and Refrigeration Sys-

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Western Meeting To Cover Dealer Profits June 5-7

SAN FRANCISCO—Three panel discussions and a dozen talks designed to show warm air heating and air conditioning dealer-contractors how to profitably meet today's operating problems are scheduled for the first "summer convention" of the industry ever held on the west coast.

The convention will be staged in the Fairmont hotel here June 5-7.

It is jointly sponsored by the National Warm Air Heating and Air Conditioning Association, the Warm Air Heating Institute of Northern California, the Institute of Heating and Air Conditioning Industries (Southern California), and the Portland (Ore.) Warm Air Heating and Air Conditioning Association.

Registration fee for the con-

(Concluded on Page 21, Col. 1)

'Appropriate' Conditioning Survey Offered Dealers

BOSTON—A local Fedders-Quigan Corp. distributor notified its dealers of a service innovation whereby it will survey consumers' homes to determine what type of air conditioning is appropriate.

Allied Appliance Co. said the surveys and ensuing reports are being made by its technical staff and engineers from Massachusetts Institute of Technology.

First results are reported to

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BEHIND PAGE ONE . . .

Model Code

Cooperative Effort Produces Completely

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Calculation of Cooling Loads

"24-Hour Load Calculation Method"

For Residential Systems Explained..... 30

Room Unit B.t.u.h. Ratings

ARI Releases Capacity Ratings on 22 Makes.... 36

Restaurant Show Pictures 38

Corrosion

Part 7—Plastic Pipe..... 40

NARGUS Convention, Exhibition To Open at Navy Pier June 9

CHICAGO—The 1957 convention and exhibition of the National Association of Retail Grocers will get under way at Navy Pier here on June 9 and continue through June 13.

The association said the "mammoth" food industries exhibition, extending for a mile on the Pier, "will offer a wealth of information to store operators through its displays of the latest in products, methods, equipment, and fixtures."

To avoid conflict with exhibit hours, all business meetings will be held in the morning, with the exhibit open in the afternoon except on opening day, Sunday, June 9, when it will be open from 10 a.m. to 5 p.m.

During this 58th annual convention, several daily business sessions will run concurrently from 9:30 to 11:30 a.m. each week day to provide retailers with a wide selection of valuable topics. General assembly meet-

ings will present important industry and government speakers on subjects of major interest to foodsmen.

After the opening meeting on Sunday afternoon, the popular "Early Birds Sessions" will open each morning's programs, Monday through Thursday, at 8:30.

Outstandingly successful retailers will present concise discussions of practical and unusual ideas that have paid off for them in increased volume and profits.

The convention will also present the NARGUS-Saturday Evening Post "Food Store Spectacular."

MODEL CODE

Completely Indexed Proposed 'Blanket' Code Fulfills 8 Needs, Would Raise Standards

KALAMAZOO, Mich. — After four years of research, writing, and amending, a proposed model code that blankets heat producing devices, air conditioning, ventilating, blower and exhaust systems, and mechanical refrigeration has been published. It was prepared jointly by Glen W. Rynbrand, heating and air conditioning contractor here, and A. Fred Madaus, mechanical equipment inspector for the city of Kalamazoo.

Their work was sponsored by the Kalamazoo Sheet Metal, Heating and Air Conditioning Contractor's Association; the Warm Air Heating, Air Conditioning and Sheet Metal Contractor's Association of Battle Creek, Mich.; and the Greater

Muskegon Sheet Metal, Heating, and Air Conditioning Contractor's Association.

"We have attempted to produce a code developed from national codes and Underwriters requirements which gives the public minimum safety and welfare standards which, when used and enforced, would unquestionably raise the quality of workmanship in the fields it covers. This, we have found, these industries need badly."

8 Points of Model Code

Rynbrand pointed out that the code was not aimed at any one city, but for use in any locality needing a general code.

The code fulfills eight needs, he said. They are:

1. Complete codes for each field under one cover.
2. Ready reference to allied national codes.
3. Clarity and simplification of requirements. Each item is a separate requirement.
4. Ease in locating a particular requirement.
5. Sufficient flexibility provided for the new or special type installation.
6. Provisions included to keep the code up to date.
7. A broader sense of enforcement control, thereby taking the pressure off one man.
8. Ease of the mechanics of adoption. Only the first eight sections would need commission or council acceptance. The remainder of rules and regulations can be set up by the mechanical equipment board.

One of the most important features, the writers believe, is the ease in locating any particular requirement. The code is completely indexed so that the average contractor will have no difficulty in finding any provision he is interested in.

Copies of Code Available

"With the present trend of cities and townships toward codes, we recognized the need for a code that was understandable, workable, and of easy reference," Rynbrand and Madaus asserted.

The first draft of the code was presented to local contractors, national associations, and societies in September, 1955. More than 600 suggestions for changes were accepted and several hundred more were made by the code committee as well as individuals.

The 260-page volume has now been completely revised and is available at a cost of \$5 per copy. Inquiries should be addressed to Rynbrand at the Glen W. Rynbrand Co., 2107 Schippers Lane, Kalamazoo, Mich.

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by new, economical system for Fresh Foods!

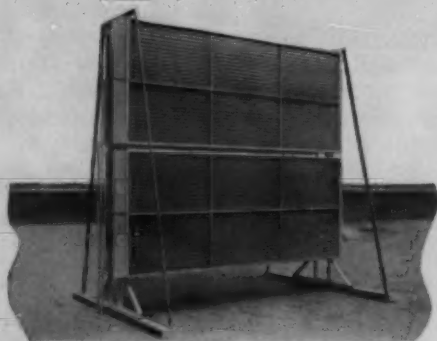
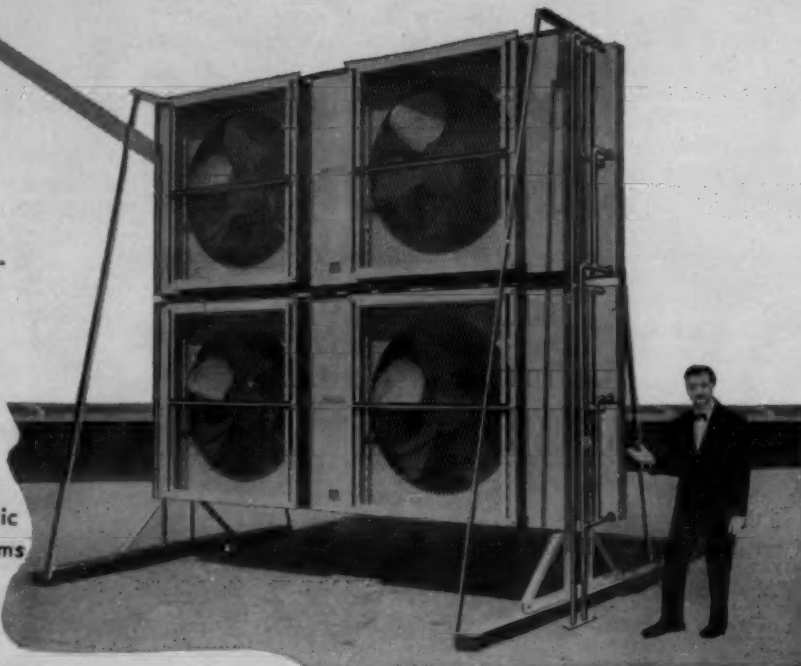
See **KRAMER** advertisement, center spread, in next week's NEWS!

KRAMER UNICON

GETS BIGGER and

BIGGER

There is only one answer to large capacity condenser problems — the KRAMER UNICON. Every day more engineers plan larger tonnage installations — 50, 100 and even — 800 tons. And every day UNICONS are shipped to all parts of the world for giant-sized installations. No other air-cooled condenser can match the long, successful record of UNICON, backed by thousands of applications since 1937 — in the widest range of tonnages and climatic conditions. Your condensing problems can be best answered by use of the best — the KRAMER UNICON.



Space-saver UNICON, as illustrated, serves a 60-Ton air conditioning system, yet takes but 70 sq. ft. of roof space.

UNICON is a remote-type air-cooled condenser that requires no water. KRAMER UNICON can be used with any size compressor, REGARDLESS of horsepower. Any size refrigeration or air conditioning system can be air-cooled with UNICON, REGARDLESS of tonnage. UNICON requires less horsepower, less piping, is easier to install and costs less. KRAMER UNICON performs best — even in semi-tropical climates.

WRITE FOR BULLETIN U-210D

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WHY THE GAL IN THE MAILROOM WANTS A RAISE

The young lady insists we are running her department ragged, and she may be right. There has never been a greater volume of mail around here. Interest in the Bendix-Westinghouse story has been high. This division was formed because we believed the air conditioning and refrigeration industry wanted another major source for compressors—and the response has been gratifying.

We did not enter this field with our eyes

shut. We knew we had to have something better to offer at a competitive price, be able to guarantee dependability, to meet schedules and service our accounts better than competition, if we were to be a major factor in this field—as we have been in the automotive air brake compressor business for nearly twenty-seven years.

Our story has made sense to many people. We are getting orders and inquiries. We're

not the biggest in the field by far, but we're growing fast and this organization has equipped itself in every way to build, sell, and service compressors you can depend on. We want *your* business. Your inquiry on our complete line of hermetics ranging in capacity from $\frac{1}{4}$ to $7\frac{1}{2}$ H. P. will get prompt attention. Evansville Division, Evansville 11, Indiana.

Export Sales: BENDIX INTERNATIONAL, 205 E. 42nd Street, New York 17, New York.

EVANSVILLE DIVISION of
Bendix-Westinghouse
Automotive Air Brake Company

For more information about products advertised on this page use Information Center, page 32.

ASRE To Meet In Miami Beach--

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gineering conference on "A Discussion of Desirable Modules for Household Refrigerators and Freezers" will be held.

Tuesday afternoon will find an inspection trip to view an ammonia system in operation at Velda Corp. and six forums being held.

Third and fourth technical sessions come Wednesday morning June 5, final period of the get-together. Third will discuss "Heat Transfer Rates from Heated Horizontal Tubes to Trichloromonofluoromethane"; "Capillary Two-Phase Flow, Part 2"; and "Simple Selection Method for Capillaries (Derived from Physical Flow Conditions)."

Last technical session will cover "Energy-Flow Analysis of a Refrigerated-Structure Com-

plex via Resistance Concept"; "Molecular Sieve—A Refrigerant Desiccant"; and "Automatic Defrost Utilizing a Latent Heat Source."

Technical program follows:

MONDAY A.M., JUNE 3

8:30—Registration, Ballroom Foyer.
9—General Assembly, LaRonde room. Opening remarks by C. M. Ashley, ASRE president; welcoming address by Dr. J. G. Woodroof, region XI director; report of tellers of election; submission for approval of the following standards: 1) PR-24, "Methods of Testing for Rating Liquid Coolers"; 2) PS-32, "Methods of Testing for Rating Bottled Beverage Coolers"; 3) PS-34, "Designation of Refrigerants."

First Technical Session

9:30—"Methods of Improving Food Preservation in Home Refrigerators," C. E. Hummel and E. S. Stoddard, Research Section, Hotpoint Co.

10:30—"Heat and Vapor Movement on Refrigerated Packaged Goods," E. K. Heaton, associate food technologist, Georgia Experiment Station; C. F. Kayan, professor, department of mechanical engineering, Columbia university; J. G. Woodroof, division of food processing, University of Georgia.

11:30—"Centrifugal Refrigeration Compressor for Aircraft," E. P. Palmatier, manager, transportation equipment department, Carrier Corp.

MONDAY A.M., JUNE 3

Contaminants Conference (9:30)
"Certain Chemical Aspects of Contaminants," H. M. Elsey, chemical consultant.

"Rates of Thermal Decomposition of CHClF_2 and CF_2Cl_2 (Refrigerants-22 and 12)," F. J. Norton, General Electric Co. Research Laboratory.

"Sealed Tube Tests with System Components," D. E. Kvalnes, "Freon" Products Div., E. I. du Pont de Nemours & Co., Inc.

"Electrical Insulation and Hermetic Motor," R. T. Divers, materials and processes department, Carrier Corp.

"Determination of Acid in Refrigerant-Oil Mixtures," Dr. W. O. Walker, consultant for General Chemical Div., Allied Chemical & Dye Corp., on "Genetron" refrigerants, and dean, Div. of Research & Industry, University of Miami (sponsored by Sporlan Valve Co.).

"Field-Installed Hermetic Failure," D. E. Friedman, Hussmann Refrigerator Co.

"Cleanup after Hermetic Motor Burnouts," J. D. Bopp and E. A. Beacham, new products division, Ansul Chemical Co.

MONDAY P.M., JUNE 3

Second Technical Session
2—"Refrigeration Techniques and Apparatus for Very Low Temperatures

(to 4.2 K)," E. T. Wessel, metallurgy department, Westinghouse Research Laboratories.

2:40—"A Mechanical Refrigeration Process for the No-Loss Storage of Liquid Hydrogen," B. W. Birmingham, Cryogenic Engineering Laboratory, National Bureau of Standards.

3:20 "Hydrogen Liquefaction by a Dual Pressure Process," D. B. Chelton, John Macinko, and J. W. Dean, Cryogenic Engineering Laboratory, NBS.

TUESDAY A.M., JUNE 4

Air Conditioning Conference (9)—
"How to Reduce Residential Heating and Cooling Costs"

"The Comparative Effects of Different Load Reducing Methods," G. R. Munger, Owens-Corning Fiberglas Corp.

"Reduction of Heat Loss to Utilize Electric Heating," Robert Boyd, Electromode Corp.

"Know Your Load," W. J. Radle, Airtemp Div., Chrysler Corp.

TUESDAY A.M., JUNE 4

Domestic Refrigerator Engineering Conference (9)—

"A Discussion of Desirable Modules for Household Refrigerators and Freezers"

"The Architect's Viewpoint," A. B. Parker, architect.

"As It Affects Kitchen Cabinets," J. W. O'Harrow, Jr., vice president and sales manager, Kitchen Maid Corp.

"From the Builder's Viewpoint," R. J. Johnson, director, construction department and research institute, Na-

tional Association of Home Builders. "The Effect on Kitchen Arrangement and Appearance," Mrs. Jean Austin, editor, American Home Magazine.

TUESDAY P.M., JUNE 4

1:30—Forums sponsored by ASRE general technical committee.

1) "Sources of Noise and Methods to Reduce or Control Them in Self-Contained (Residential Type) Equipment," Rosewood room, L. K. Warwick, Hotpoint Co., moderator.

2) "Electrical Requirements and Problems of Air Conditioning Equipment," Civic room, W. L. McGrath, Carrier Corp., moderator.

3) "Controlling Summer Cooling Cycles to Provide Optimum Comfort Conditions without Using Reheat," South Card room, P. E. McHall, Minneapolis-Honeywell Regulator Co., moderator.

3-4) "Sources of Noise and Methods to Reduce or Control Them in Larger Self-Contained Equipment and Remote Systems," Rosewood room, C. M. Ashley, chief staff engineer, Carrier Corp., moderator.

5) "Reverse Cycle Air Conditioning," Civic room, E. C. Raney, Ranco Inc., moderator.

6) "Automotive Air Conditioning," South Card room, D. J. Mull, O. A. Sutton Corp., moderator.

WEDNESDAY A.M., JUNE 5

Third Technical Session
9—"Heat Transfer Rates from Heated Horizontal Tubes to Trichloromonofluoromethane," Merl Baker, professor of mechanical engineering, University of Kentucky.

10—"Capillary Two-Phase Flow, Part 2," H. A. Whitesel, chief engineer, Amana Refrigeration, Inc.

11—"Simple Selection Method for Capillaries (Derived from Physical Flow Conditions)," W. R. Briskin, manager of advance engineering, C. K. Chu, and L. Cooper, General Electric Co.

Fourth Technical Session

9—"Electrical Insulation and the Hermetic Motor," R. T. Divers.

9:45—"Energy-Flow Analysis of a Refrigerated-Structure Complex via Resistance Concept," C. F. Kayan.

10:30—"Molecular Sieve—A Refrigerant Desiccant," Henry Lautensack, development engineer, F. M. O'Connor, development chemist, M. L. Suval, development engineer, Linde Co.

11:15—"Automatic Defrost Utilizing a Latent Heat Source," O. J. Nussbaum, Kramer Trenton Co.

Dexter S. Kimball, Jr. Dies

ELYRIA, Ohio—Dexter S. Kimball, vice president and director of Bendix-Westinghouse Automotive Air Brake Co. here, died recently at the age of 50.

He became factory manager at Bendix-Westinghouse here in 1945, general manager in 1952, and vice president and director in 1953.

Kimball had been, during the past, assistant professor of industrial engineering at Cornell university, production engineer at North American Aviation Corp., and supervisor of planning at B. F. Goodrich Co.



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pair for longer wear. Chase solder-joint fittings fit Chase tube accurately! Expand and contract as one leak-proof, pressure-tight unit. When assembled, they have no shoulders or rough inside edges, insuring you of smooth refrigerant flow. And you get Chase tube and fittings ready for assembly—clean, bright and flawless!

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LARKIN CEILING HUMI-TEMP

Price is only one factor in the selection of any product—especially one that has so important a task as protecting valuable perishables. Performance must come first. Quality cannot be overlooked. Durability is highly important. Larkin has all of these. And Larkin has low prices, too. Compare them and see for yourself how low they are.

For the latest Larkin price list, see your wholesaler. If you wish, write direct to us. We shall be glad to send you one.

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Ansul Moisture Indicator, Sight Glass Combination Is for Refrigerant 12, 22

MARINETTE, Wis. — The "Super Dry-Eye"—said to be the refrigeration industry's first combination moisture indicator and sight glass—is being introduced by Ansul Chemical Co.

The new servicing instrument has been designed to enable refrigeration service engineers or equipment owners to detect basic refrigeration system trouble in its earliest stages and prevent costly breakdowns, the company said.

The new Super Dry-Eye is a T-shaped brass fitting, similar in size, general appearance, and price to Ansul's regular Dry-Eye, which has been on the market the past three years. However, where the regular Dry-Eye offered only one moisture indicating element, the Super Dry-Eye has two—one for Refrigerant-12 and another for Refrigerant-22, plus a built-in sight glass.

"The moisture indicating element for R-12 shows blue in color when the refrigerant is dry and in safe operating condition—that is, when moisture content is below 10 parts per million," it was explained. "When this element turns pink the refrigerant is dangerously wet, above 30 p.p.m."

"For R-22, the indicating element is green when dry (below 20 p.p.m.); and pink when wet (above 25 p.p.m.). The R-12 element works equally well with Refrigerant 11, 113, and 114.

"The circular fused glass window through which the moisture indicating elements are visible also serves as a sight glass. Bubbles in the flowing refrigerant indicate a low refrigerant charge or a restriction in the line.

"An important feature of the sight glass is its proven leak-proof characteristics. The fused glass window has been used for three years on the regular Dry-Eye with no leaking reported."

The Ansul Super Dry-Eye, with 1/4, 3/8, 1/2, and 5/8-in. flare fittings, will be available through refrigeration wholesalers.

'CAN BE ATTACHED WITHIN SECONDS'

"The new Ansul Super Dry-Eye may be attached within seconds to any Ansul T-Flo drier, producing a refrigerant drier, moisture indicator, and sight glass with only one break in the refrigeration line," it was pointed out. "Hand tightening provides a leak-proof seal.

"By combining the Ansul Super Dry-Eye with the Ansul T-Flo drier, five basic functions are possible: (1) drying the refrigerant, (2) filtering foreign material from the refrigerant,



Ansul Super Dry-Eye combination moisture indicator and sight glass—is being introduced this month by Ansul Chemical Co.

(3) removing acid, (4) indicating moisture, and (5) indicating flow conditions of the refrigerant."

Region 5 ARW Will Meet June 27-29

GRAND RAPIDS, Mich.—An "outstanding" presentation of business innovations will be the order of the day when Air-Conditioning & Refrigeration Wholesalers-Region 5 members get together at St. Clair Inn and Country Club, St. Clair, Mich., June 27-29, for their summer meeting.

Ila H. Unseld, secretary, region 5, announced there will be a golf "extravaganza," door prizes, ladies prizes, swimming, and other features in addition to the business program.

Members in charge of events include Rod O'Flaherty, registration, Elmer Davey and Horace Schmidt, golf, Ray Lee and Jack Dannels, greeters, Al Lifsey and Ed Harberer, door prizes, Howard Yost and Austin Jones, ladies' prizes, and Hank Dyminski and Bob Wellington.

Whitsett Heads Michigan RSES

SAGINAW, Mich. — Harvey Whitsett, service manager for Southwestern chapter; secretary, Willie Baker of the Wolverine (Lansing) chapter; treasurer, Jim Porter of the Furniture City (Grand Rapids) chapter; sergeant at arms, Paul Zielinski of the Cascade (Jackson) chapter; and educational director, Ed Van Der Kolk of the Furniture City chapter.

DO THE SAME WORK WITH A SMALLER COMPRESSOR!

by new, economical system for Fresh Foods!

See **KRAMER** advertisement, center spread, in next week's NEWS!

Have you discovered why SERVICEMEN NOW PREFER

Mortite

**CAULKING CORD
and
CAULKING GUM**

for every Sealing Job?

Acceptance Proves It! From coast-to-coast refrigeration service and maintenance men have discovered two great MORTITE products which give them price, convenience and quality advantages unmatched by any other compound on the market today. Now, sealing and caulking jobs are finished faster, better and at much less cost than ever before!

"Tool Kit" Size! Both Mortite Caulking Cord and Mortite Caulking Gum come in handy cylindrical containers—easily fit into any crowded tool box, large or small. These compact containers have been designed by working refrigeration servicemen to eliminate product waste resulting from flimsy, bulky packages.

THESE FACTS TELL THE DIFFERENCE!

MORTITE CAULKING CORD—3/16" rope-like strands always retain the consistency of modeling clay. Non-staining, Mortite White in color—may be painted immediately after application. Three compact 8-strand 16-ft. rolls can be unwound one or more strands at a time without unwinding entire roll.

MORTITE CAULKING GUM—Provides the perfect answer for the serviceman who needs a bulk caulking compound to hand mould into beads, wads, gaskets, etc. One pound slug (2 1/2" x 6") never cracks or hardens—adheres to any clean, dry surface through normal temperature ranges.



Mortite Caulking Cord or Mortite Caulking Gum will do the job better than your present caulking compound at a fraction of your present cost. Write today for complete information about these two products and the complete line of Mortite refrigeration products.

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Makers of Famous No-Drip Tapes and Mortite



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O.K! Send me full information about the complete line of Mortite refrigeration products.

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_____ Serviceman

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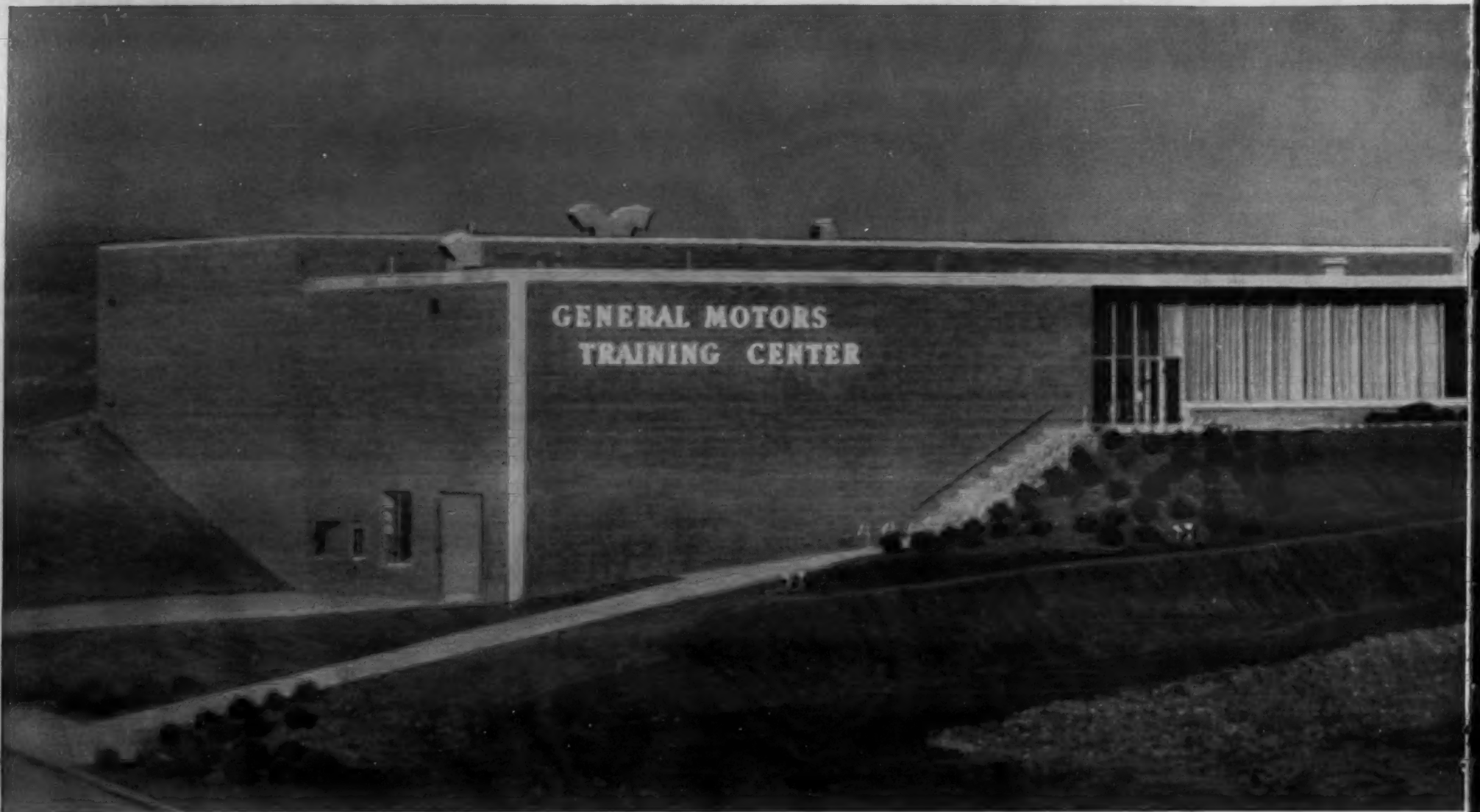
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What you see here has never happened before in the appliance and air conditioning business

Now the nationwide network of General Motors Training Centers is being opened to the dealer personnel who service Frigidaire products.

Those selected by their dealers can come here for complete training courses in product service from fundamentals through "post graduate" training. In "learning by doing" sessions, Frigidaire professional instructors guide these men through the latest in service techniques on appliances and air conditioning products. Schooling in customer rela-

tions and courtesy is covered, too. They learn how to do their jobs better—right the first time—and at less cost to their bosses and customers.

They learn what would take months—or forever—in the costly school of hard knocks.

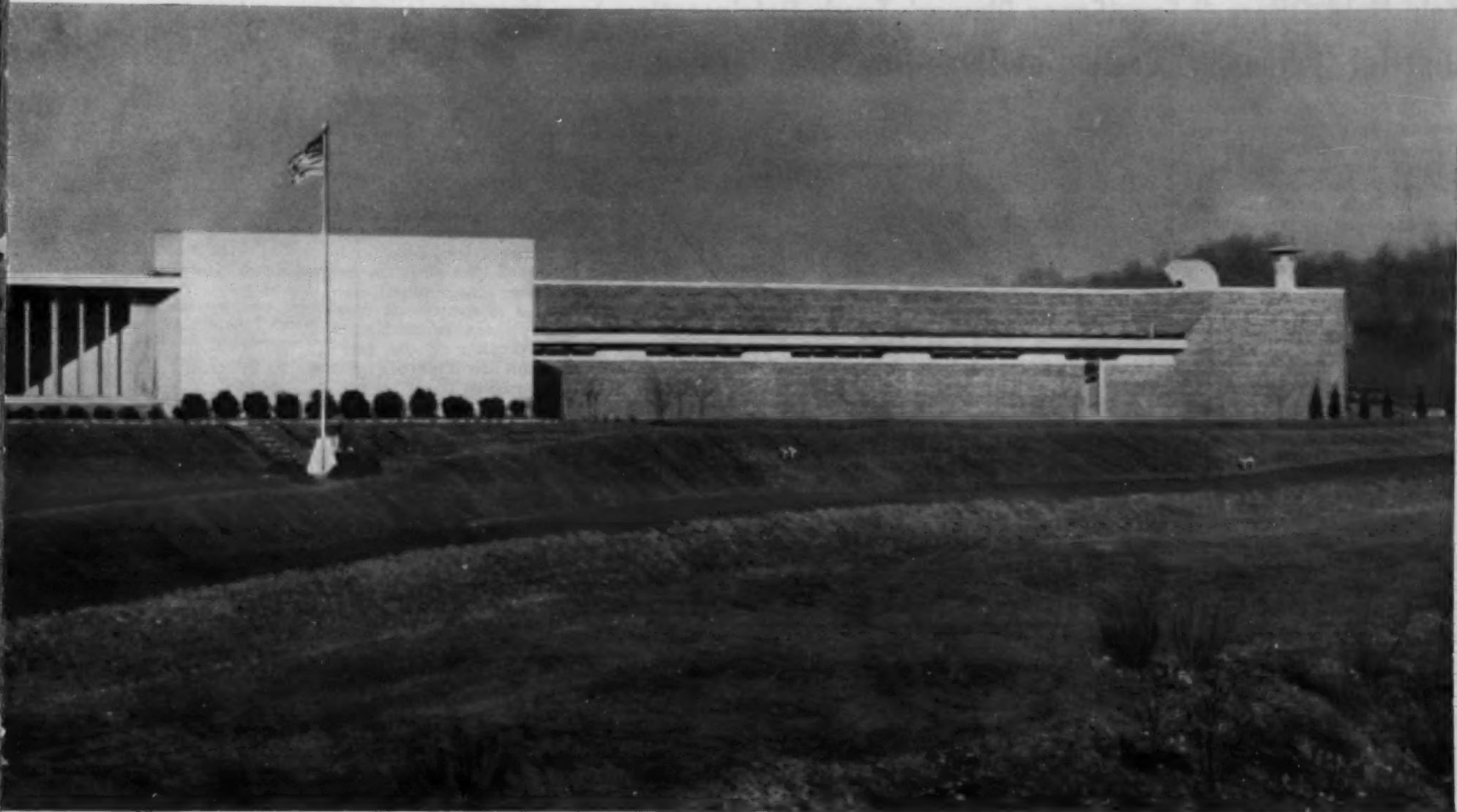
Frigidaire has always been a service-minded organization. It has always provided its dealers with training programs and operating guidance which are frankly recognized as models for the industry.

Such programs can't help but be reflected in the good name of Frigidaire and Frigidaire dealers who sell these proud products.



FRIGIDAIRE

Frigidaire—Built and Backed by General Motors



Typical General Motors Service Training Center, Pittsburgh, Pennsylvania.

TRAINING CENTERS

better still!

But they pay off in other ways, too. They've been a life-saver for dealers who, with the shortage of skilled men, would otherwise have had to train their own people. Most importantly, skillful Frigidaire Service helps open friendly doors for Frigidaire salesmen everywhere.

That's why we're proud to announce this new and important step in our service program. We're proud to show that one reason for our success is our policy of "taking care of our own"—the millions of people who have Frigidaire products, and the organizations who sell and service them.



Classroom instruction on Frigidaire Meter-Miser refrigerating mechanism.

is on the March

Kold-Hold Offers 2-Fan 'Super Blower' Truck Refrigeration Unit for 'Perimeter' Cooling at Three-Day Sales Meeting

LANSING, Mich.—Field representatives of Tranter's Kold-Hold Div. met here recently at a special three-day sales meeting called to introduce them to new products that have just been announced by the company.

Highlight of the meeting was the unveiling of the all-new two-fan "Super Blower" and the new "Lance" system.

The Super Blower, described as "an entirely new concept in mobile truck refrigeration," features use of two fans to provide "perimeter" cooling. The Lance is a completely new refrigeration system especially designed for use on retail milk routes.

Also discussed at the meeting were recent design changes incorporated in the "Mark" and



Field men attending a special sales meeting at Lansing at which the new Kold-Hold LANCE continuous refrigeration system for retail milk-route trucks and the new Super Blower were introduced were photographed in front of the company's main offices. Back row, left to right: G. L. Von Amelnunx, S. W. Johnson, H. C. Hoover, J. B. Callahan, M. H. Gwynn, C. C. Penn, R. D. Spiller, C. P. Richardson, A. J. Nelson, O. C. Yates, C. Yarbrough, and C. V. Tietjen. Front row, left to right: R. S. Warner, L. J. Freitas, J. J. Riley, W. D. McDaniel, F. E. Kennedy, J. Locke, F. W. Smith, H. H. Emler, Jr., Wm. Frye, C. Bertram, and A. E. Hulson.

"Crown" systems.

Taking part in the program were James R. Tranter, president; H. E. Guyselman, executive vice president; S. J. (Pat)

Stowell, sales manager; J. H. Fitzgerald, sales supervisor, Kold-Hold Div.; D. F. Pillow, service manager; and Mrs. L. S. Worthington, ad director.

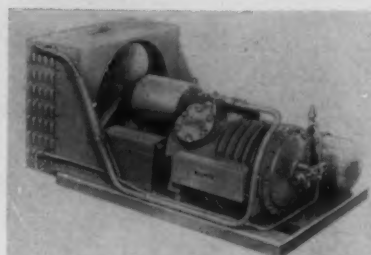
Semi-Hermetic Truck Refrigeration Condensing Units 'Tailor-Made' To Fit

UTICA, N. Y.—Truck refrigeration "can now be tailor-made to suit the space available in delivery trucks," according to Brunner Mfg. Co.

Brunner semi-hermetic truck refrigeration condensing units come in two separate designs—one with components arranged for installation on the left side of the truck, the other for the right side. The optional arrangement of components "permits easy access to the control panel regardless of the unit's position on the truck body," it was pointed out.

These air-cooled units are supplied in integral units of 1½, 2, and 3-hp., and fractional units from ½ through 1 hp.

Added stabilizing factors which compensate for heavy-duty road use include solid steel



AIR-COOLED semi-hermetic condensing units by Brunner come in 1½, 2, and 3-hp. and fractional sizes from ½ through 1 hp. with optional right or left arrangement to suit truck refrigeration needs.

block mounting for the motor compressor and a large vibrator connected in the discharge line, according to the company. The condenser is securely braced with steel angle plates and shroud.

For low temperature applications, there is a 3-hp. "Brunner-metic," using Refrigerant 22.

Railroad 'Reefer' Car Is Highlight at Perishable Commodities Conference

LAFAYETTE, Ind. — One of the attractions at the 11th National Conference on Handling Perishable Agricultural Commodities, a week-long session conducted at the University of Purdue here, was a Chicago, Burlington & Quincy reefer car featuring Trane Co. refrigeration equipment.

According to Purdue officials, about 25 American railroads were represented at the conference, along with two major Canadian lines. In addition, horticultural, agricultural, and mechanical engineering students examined the Trane equipment.

Carrier Dividends

NEW YORK CITY — Dividends on the common and preferred stocks of Carrier Corp. were declared recently by the board of directors.

Payments of 60 cents per share on common stock and 56¼ cents per share on cumulative preferred stock, 4½% series, will be made on May 31, 1957, to holders of record at the close of business on May 15, 1957.

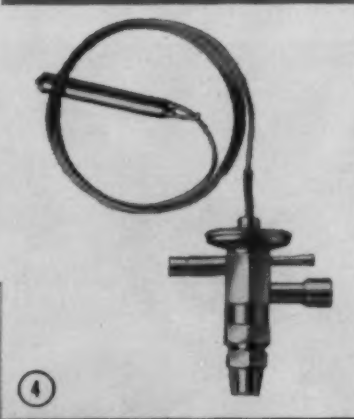
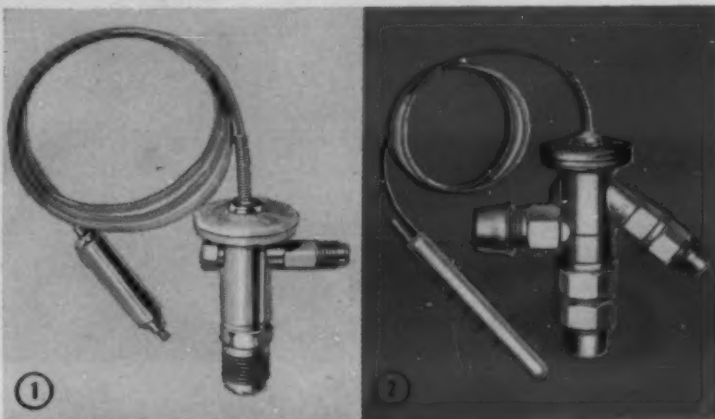
See A-P for Complete capacity ¼ to 25 tons, R-12

Famous liquid charge equips these thermostatic expansion valves for any application, any position and any ambient temperature.

SELECT the capacity you need, install the valve and the job's finished! Standard thermostatic expansion valves shown here (and A-P offers you many more) actually do triple duty. All excel on low temperature, commercial and air conditioning applications. Special power element charges now available when required for specific applications.

Equip with the complete line preferred by leading manufacturers and you'll profit from unequalled performance.

A-P has developed one of the industry's most extensive liquid and gas thermo-charging operations.



1. MODEL 206C — fixed superheat. R-12, R-22 or Methyl. Capacity: ¼ thru 1½ tons R-12.
2. MODEL 207C — adjustable superheat. R-12, R-22 or Methyl. Capacity: ¼ thru 1½ tons R-12.
3. MODEL 209 — adjustable pressure limit and superheat. R-12, R-22 or Methyl. In ¼ thru 1½ tons R-12.
4. MODEL 214 — adjustable superheat. 1, 2, 3 tons R-12. 2, 3, 5 tons R-22.
5. MODEL 217 — adjustable superheat. Solder connections. Capacity 5 to 12.5 tons R-12; 7½ to 19 tons R-22.
6. MODEL 218 — adjustable superheat. R-12 (16, 19, 25 tons), R-22 (25, 30, 40 tons). Available with pressure limit.

Typical manufacturers served by A-P

Carbonic Dispenser, Inc.
Chrysler Corporation,
Airtemp Division
Federal Refrigeration
Manufacturing Co.
Glasscock Bros. Mfg. Co.
La Crosse Cooler Co.
Schaeffer, Inc.
The O. A. Sutton Corporation
Warren Manufacturing Co.

CONTROLS COMPANY OF AMERICA



Manufacturers of A-P CONTROLS

2460 N. 32nd St. • Milwaukee 45, Wis.

Controls That Make Modern Living Possible

**KRAMER HAS
A NEW CONCEPT
FOR
FRESH FOOD
STORAGE!**

economical, too!

See **KRAMER**
advertisement,
center spread,
in next week's
NEWS!

CUBES, CRUSHED, FLAKES OR CHIPS...

which
ice machine
is best for
your prospects?



- * You offer each prospect just the ice he needs when you're selling Carrier's 15 ice machines—cubes, crushed, flakes or chips.
- * Only Carrier arms you with the sales clincher of Certified Capacity; you never have to get along on vague promises of ice production "up to" so many pounds per day.

Whatever a prospect's ice needs, you can meet them when you're a Carrier dealer. You offer the most complete line on the market.

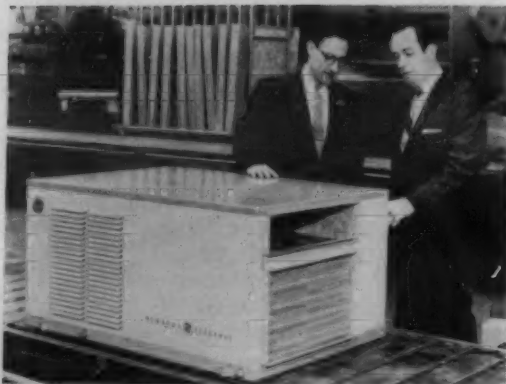
You can offer ice production in a known, guaranteed amount... certified in writing. And this production is established under realistic conditions of water and air, not under artificially controlled laboratory conditions.

This one-two punch closes more sales for you. You get it only from Carrier.

Call the Carrier distributor listed in your Classified Telephone Directory, or write Carrier Corporation, Syracuse, New York.

Carrier

air conditioning • refrigeration



L. H. HIRSCHBACH (L.), marketing manager, and R. K. Miller, general manager of the General Electric home heating and cooling department discuss the small dimensions of the first whole-house package unit to come off the line.

G-E Whole-House Air Conditioners Offer Flexibility, Heavy Compressor

TYLER, Texas—A year ahead of schedule, General Electric has introduced its "completely new universal full 2 and 3-ton packaged whole house air conditioners" now in production at its recently completed \$15,000,000 home air conditioning plant here, the company announced.

The new whole house air conditioner was re-scheduled a year sooner "in order to reach the tremendous home improvement market that represents more than a \$9 billion dollar potential," according to R. K. Miller, general manager of the home heating and cooling department.

MAJORITY OF SYSTEMS WILL GO INTO EXISTING HOMES IN 1957

The home improvement market has the greatest growth potential in the entire national economy, he stated. During 1957 Miller expects the home cooling industry to move 230,000 units representing an increase of 33% over 1956. The majority of these cooling systems, he said, will go into existing older homes.

RATED CAPACITY OF TWO UNITS

"The new Tyler whole house air conditioners — using no water—have a rated capacity of 24,000 and 37,000 B.t.u. of cooling, respectively," the announcement stated. "They are especially engineered and designed to solve the difficulty sometimes encountered in air conditioning older homes, particularly those homes using wet heating systems."

For the home builder the air conditioners "are ideal for homes of 1,000-1,600 sq. ft.," it was pointed out.

'FLEXIBILITY' CLAIMED TO BE MAJOR FEATURE

"Flexibility is the major feature of these units. Besides the relatively easier installation in existing homes, the air conditioners can be conveniently installed virtually anywhere that the cooling is required in commercial establishments. These units can be used in small and medium sized stores singly, in pairs, or as many as necessary to obtain zone-by-zone air conditioning.

"The new units feature extra heavy compressors that were specifically engineered for the entire home. They are quieter and more compact than previous models. The larger unit occupies less than 4 by 2½ ft. of space. The other unit is proportionately smaller and less than 2 ft. in height.

USE METAL-TO-GLASS LEADS IN UNITS

"Metal-to-glass leads that have been used for over 30 years

in the General Electric refrigerator are used in these new home cooling units. Developed by the laboratories in Tyler to put an end to the leak problem that has plagued the industry, this unusual engineering feature is an exclusive with General Electric."

With 'Wet' Heat

Basement Window Units Furnish Cooling For Home System Devised by Fan Firm

BATTLE CREEK, Mich.—An inexpensive "basement system" of home air conditioning adaptable to steam or hot water heated homes with basements has been proposed by Gordon McLarty of McLarty Systems here, and illustrated in a brochure promoting the company's line of special purpose fans and controls.

Here's how the system works, according to the company's brochure:

Air conditioners, installed in the basement windows, dehumidify the basement and pour cooled air into the basement area. The cooled air readily spreads out and may be picked up at the floor anywhere and pushed upstairs by McLarty

fans, the manufacturer pointed out.

Inexpensive distributing units can be made for each first floor room by installing a suitable box header where the air outlet is desired and hanging a 6 or 7-ft. length of round or rectangular pipe down the basement wall to about 1 ft. from the floor. A fan is installed about midway in the pipe to force the cooled air into the upstairs rooms.

Return air can be allowed to go down the basement stairs or a floor grille can be used, opening into the basement area. The company recommends a return of at least 50% greater free area than the sum of the intakes to the rooms. Another suggested system would combine

supply and return in a 30 by 10-in. grille. You can blow cooled air up 12 in. of it and use the other 18 in. for return.

When delivering air to a second story bedroom, two or more stud spaces can sometimes be used. If there is a closet below, an extension of the standard unit can be used to a 12 by 12-in. floor register. Return air can come down the stairway.

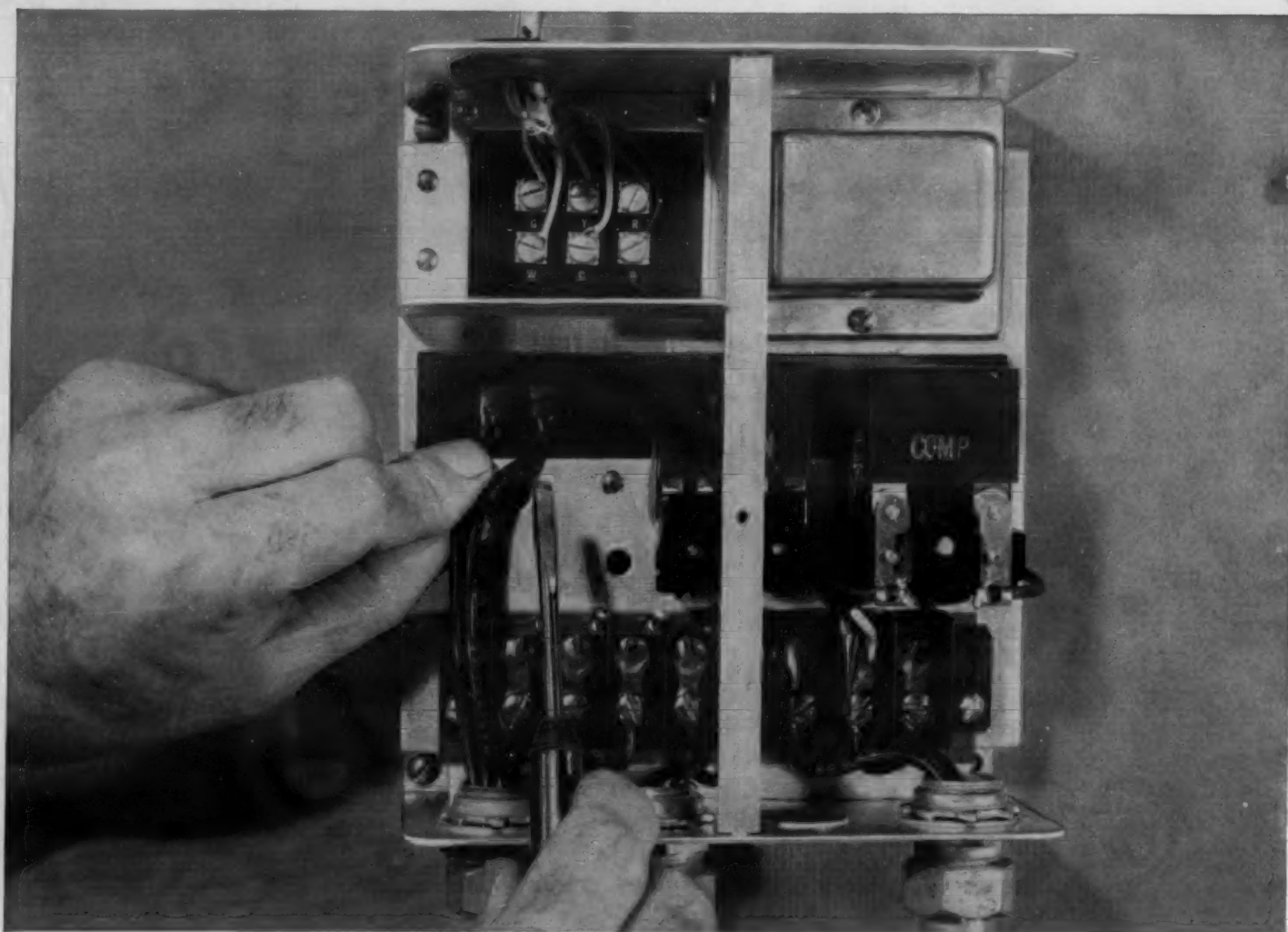
Four of these distribution units per ton of air conditioning is the company's recommendation. This, according to McLarty, provides about 1,400 c.f.m. of circulating air.

It is suggested that window units be controlled by their own thermostats and distribution units all be controlled by one thermostat upstairs.

The McLarty firm manufactures circulating fans for use in heat ducts as well as other types of fans for moving air from room to room, it was explained.

When it comes to controls for packaged air conditioners

It's easier—and more



A complete cooling control panel for self-contained air conditioners, the W402G (above) has these quality features: 24 volt transformer, heavy duty compressor relay, color coded thermostat terminals,

line and load terminals, pressure control terminals and evaporator fan relay. The cover is an easily-removable, wrap-around type which affords convenient accessibility for quick and easy wiring.

All W402 Panels have these outstanding features:

1. Complete circuitry allows you to "customize" your particular installation.
2. Designed to contain three relays which may be contactor, fan relay and heating relay, or different combinations of these relays.

3. Remote Control. Fan relay permits selection of fan operations from the thermostat.

4. Available with unmounted Hi-Lo Pressure Control.

5. Small—7½" high, 6½" wide, 3½" deep.

Slide Rule Helps Find Residential Heat Gain

THIS International Heater Co. "Slide Calculator" condenses NWAHACA Manual 11 into three slide rule settings. Using this, it is said the cooling load for a home can be determined in less than two minutes.



2 Form Fresno Air Conditioning Dealership

FRESNO, Calif.—Eldon Gearing and Leslie Busick have formed Busick-Gearing Air Conditioning Co. at 4452 N. Blackstone Ave.

Gearing has been in the air conditioning business locally since graduating from the Fresno Technical High school in 1940. He will be in charge of operations of the firm.

Busick will head the sales and engineering department.

The firm's new building houses a sheet metal shop, an engineering department, and a refrigeration department. The company will specialize in the installation of air conditioning in homes in Fresno and vicinity and has been named as representative for Carrier Corp.

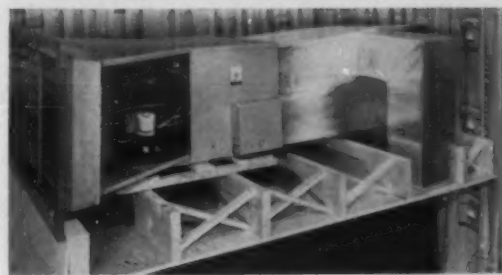
Offers 2, 3½-Hp. Air-Cooled Packaged Residential Units

NEW YORK CITY—New 2 and 3½-hp. residential package-type, air-cooled air conditioning units have been introduced by the American-Standard Air Conditioning Div.

It was also announced that these new units are available with, or without, prefabricated fiber glass duct kits and register and grille sets for basement or attic installation.

According to the announcement, the units "are designed for low cost budget residential cooling and are made to retail for as little as \$25 per month completely installed."

W. H. Baker, vice president, sales, stated that the new package unit may be used for every type of residential air conditioning application. It can be added to an existing warm air heating system or installed independently with its own duct system in



DESIGNED for low-cost budget residential cooling, new 2 and 3½-hp. air-cooled air conditioning offered by American-Standard are made to retail for about \$25 a month completely installed.

homes with steam or hot water heating.

Identified as model ACP-20 and ACP-35, the units incorporate compressor, condenser, evaporator, and blower "all in one compact jacket."

"The twin compressor system used in these units makes its operation extremely economical," it was stated. "Operation is controlled by a three-way switch located near the thermostat. During normal periods the switch is set for 'low cooling.'

In this position the unit operates on only one compressor which is automatically governed by the temperature setting of the thermostat.

"During heavy load periods of extreme heat, the switch is set for 'high cooling.' In this position one compressor runs continually while the other cycles on and off as required to maintain even temperature throughout the house.

"The twin compressor system also provides for humidity control because continuous blower operation circulates the air in the home constantly across the evaporator coil removing excess moisture from the air but supplying only the amount of sensible temperature difference required by the thermostat."

Specifications for the two units were listed as follows:

Model ACP-20: Complete hermetically sealed refrigerant system with two 1-hp. compressors; 230 volts, single phase, 60 cycles. Cooling capacity rated at ASRE standard conditions at 95° outside temperature; 22,000 B.t.u.h. with dual compressor operation, 11,000 B.t.u.h. with single compressor operation; 1/3-hp. blower delivers 810 cu. ft. at .20" SP external.

Model ACP-35: Complete hermetically sealed refrigerant system with two 1¾-hp. compressors; 230 volts, single phase, 60 cycles. Cooling capacity rated at ASRE standard conditions at 95° outside temperature; 36,000 B.t.u. with dual compressor operation, 17,000 B.t.u. with single compressor operation; 1/3-hp. blower delivers 1,505 cu. ft. at .25" SP external.

Freel Heads Center

JACKSONVILLE, Fla.—Stephen A. Freel, Sr. is manager of one of Jacksonville's newest business enterprises, the Big Appliance Center, which has opened at 3120 Beach Blvd.

profitable to offer the best

Honeywell Custom Air Conditioning Control with famous W402 Panels

IT'S EASIER to offer Honeywell Custom Air Conditioning Control because you don't have to go through time-consuming, on-the-spot wiring of internal circuits. Honeywell control panels like the famous W402 series have exclusive *Simplified Wiring* which permits factory wiring of the heating-cooling circuit. Their compact size and "wrap-around" cover make installation easy and quick.

And Honeywell Custom Air Conditioning Control is more profitable, too. No other panels offer

so many outstanding features at such low prices. You also save in service costs because Honeywell's time-tested components guarantee years of trouble-free performance.

All Honeywell panels are designed to work with the famous line of Honeywell heating-cooling thermostats. For full information on the complete line of Honeywell Control Panels for air conditioning, call your local Honeywell office or write to Honeywell, Dept. AN-5-179, Minneapolis 8, Minnesota.

*Whatever your control needs on 2 h.p. units, there's a Honeywell
W402 panel to meet them—more profitably—more dependably*

W402G—A complete Control panel for self-contained 2 h.p. air conditioners. Provides compressor control and fan selection. Compressor Relay is double pole, single throw rated at 16 amps per pole. Can be wired for single pole, single throw rating of 22 amps.

W402B—A control panel specially designed for reverse cycle heat pumps of self-contained variety.

W402F—Most compact panel on the market—for two-stage cooling. Offers 2-stage cooling with self-contained air conditioners which employ two 1¾ h.p. compressors and a fan relay for fan selection.

Other Models available with remote reset relays, heating relays and special sequencing operations. All contain Honeywell time-tested components.

*Trademark

Honeywell



First in Controls



Honeywell Round, T-87
world's most popular
heating-cooling thermostat.

FRESH FOOD WEIGHT LOSS CONTROLLED!

by new,
economical
system for
Fresh Foods!

See **KRAMER**
advertisement,
center spread,
in next week's
NEWS!

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)

limited to the pace of a horse. When Paul Revere made Long-fellow famous he was dependent on Dobbin, too.

More than 30 centuries elapsed, therefore, before there was any progress in the speed at which men could go from one place to another sitting down. In 1830 a tremendous historical event happened. MAN BROKE THE OAT BARRIER. After centuries of personal movement stalemate, the steam engine and railroads liberated mankind from the athletic prowess of horses as the sole method of fast transportation.

Further progress plodded. In 1910 our first military airplane had a guaranteed pace of 42

miles per hour. Thirty-five years and two wars later, engineering persistence pushed airplanes up to a rapidity of 470 miles per hour. Hence it took man more than a third of a century to go from 42 to 470 miles per hour.

That, of course, is a good record in contrast with the SIX THOUSAND YEARS it took mankind to step from 30 miles an hour to 40 odd. Although it had taken 35 years to go from 42 to 470 miles an hour, in the decade from 1945 to 1955 man catapulted personal propulsion from 470 miles per hour to more than 1,500 miles per hour. New records now are established every few days in this field.

The stampede of progress, as shown by a historical graph of travel time, was dramatically climaxed over Long Island in September, 1956, when a Navy plane shot itself down by overtaking and colliding with its own bullets!

Mass Destruction

In the field of missiles we've moved from David's slingshot (the first guided missile) to the Roman catapult to present headlines about intercontinental ballistics. Let's plot the development of explosives during recorded history—from Chinese firecrackers to the hydrogen bomb. Within the last few years the effectiveness of explosives has increased millions of times. We have had to invent a word to measure them, "Megaton."

Biggest explosive we employed in the European Theater in World War II was a blockbuster, which had a value of 6 tons of T.N.T. (and, as its name implied, could destroy a whole city block). One megaton is equal to a million tons of T.N.T. (166,000 blockbusters). It would take a freight train stretching from New York to Washington to carry a megaton of T.N.T.

That little ole primitive atom job that was dropped on Hiroshima was rated at 20 kilotons, or one fiftieth of a megaton. During World War II armies totaling some 25 million men delivered explosives—and directed them toward one another—for a period of five years. As of now, eight men could do an equivalent job in one day—with H bombs!

Food and Stuff

Let's look at accelerating technology from a strictly civilian viewpoint. If you get a prescription, chances are seven out of 10 that the medicine was unknown 15 years ago.

Today 170 million Americans thrive on the same land where one million Indians starved from one famine to another even before we white folk had despoiled that land by burning up the forests, annihilating buffalo and

other game, ruining topsoil. Today we have 7,000 more babies at the breakfast table every morning. Yet, with all this increase in population, the U. S. is the only nation on earth where you have to beat your kids to make them eat.

Half the world goes to bed hungry every night, yet our only food problem is how to get rid of an ever-mounting surplus. We have the same land and the same resources the Indians had. However, we have something else—trained minds, skilled manpower, and tools. By mixing technology and free enterprise we have achieved standards of living and personal freedom which make the dreams of Utopian thinkers like Karl Marx seem like backward imaginations.

Technology Has No Morals

Just as we exploit technology for peace and prosperity, we must also exploit it for national defense. Technology doesn't care who uses it. It works with equal impersonal efficiency and grim effectiveness for good or evil, for friend or for foe.

Modern war—whether cold, hot, or lukewarm—is a clash of total economies, total national resources, men, machines, and materials. Before we think about mobilization of a complex economy, let's pause to pay homage to a classic mobilization of a simple economy. When Italy invaded Ethiopia, Haile Salassie is reputed to have organized his primitive nation with this proclamation:

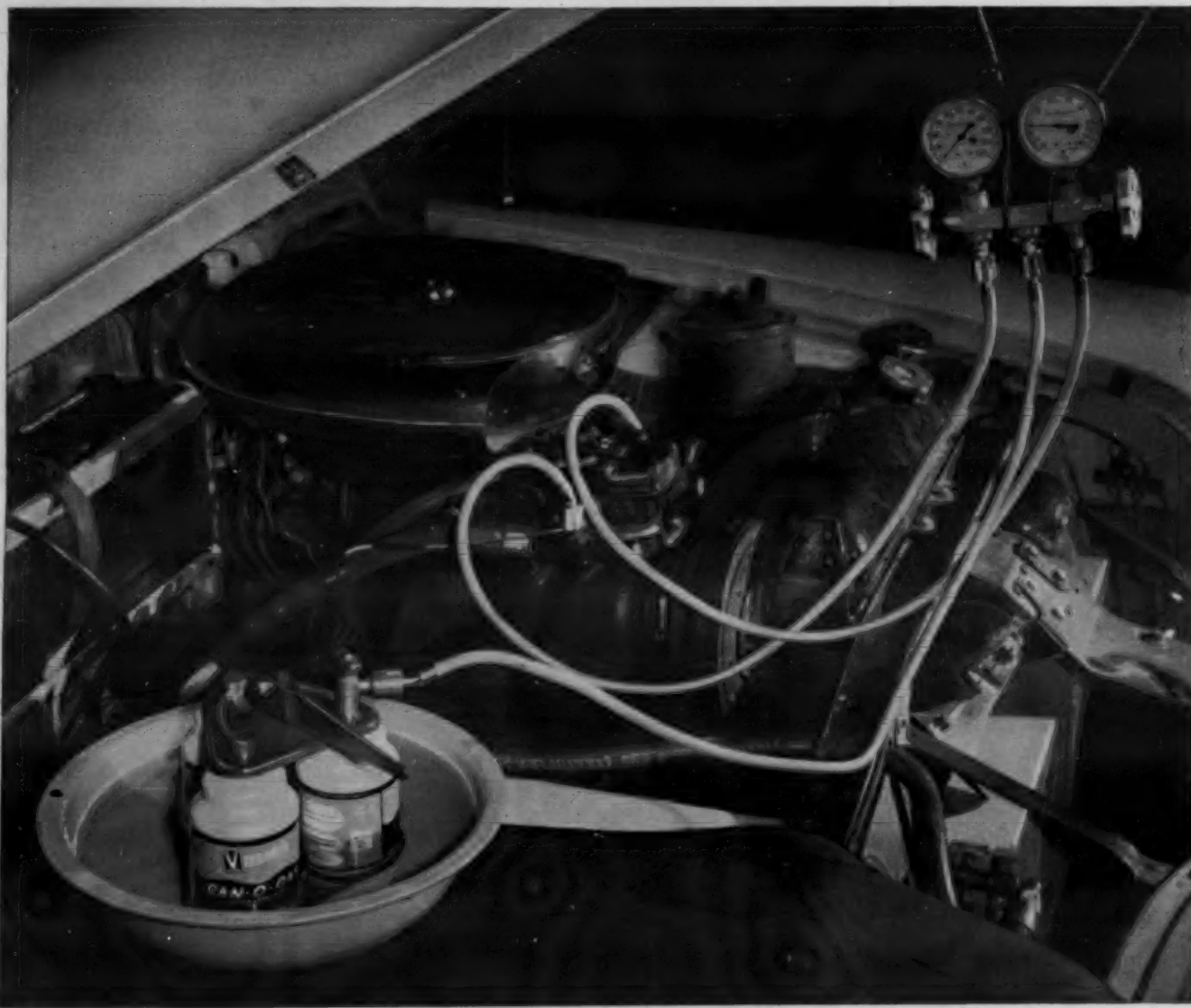
"The country is now mobilized. All men and boys able to carry a spear will report immediately to Addis Ababba for active duty. Married men will bring their wives to do the cooking. Women with babies, the very old, and the very young, need not report for active service. Men that are not married will bring any woman they can find. Anyone else found at home will be hanged."

America, in contrast, entered World War II with the most gigantic and frustrating game of hide-and-seek on record. Thousands of industrialist descended on Washington to find out who in the military wanted to buy what. At the same time, thousands of government men scoured the country trying to find out who could make what.

All such floundering boiled down to this—if you wanted to buy a land mine you couldn't look up that manufacturer in the Yellow Pages of your phone book. The man who could make a land mine didn't know what a land mine was.

Two of the principal products we produced were surpluses and shortages. We had ships without engines, planes without propellers, tanks without transmissions. It would seem to be elementary, therefore, that if we are not going to have a big game of hide-and-seek next time we had better match up our military producers and our military requirements in these times of uneasy peace.

It took man 250 years to progress from the short bow to the long bow, yet it took less than 10 years to go from the A-bomb to the H-device. Under these conditions, industry and defense are inseparable.



Typical Can-O-Gas multi-opener hookup.

**NOW! A SIMPLIFIED METHOD for charging
automobile air-conditioning systems**

CAN-O-GAS®

"Virginia's" new Multi-Opener devices for Can-O-Gas provide, for the first time, an easy method of adding preweighed charges of refrigerant. Amounts from 16 oz. to 60 oz. can be precision measured without scales or other calibrating devices.



The multi-opener devices for Can-O-Gas pictured here provide the simplest and most

economical way of recharging automobile air-conditioning units. There are 5 reasons:

- Simultaneous opening and dispensing of 2, 3 and 4 cans of refrigerant provides a preweighed charge of 30 oz., 45 oz., 60 oz., or combinations thereof.
- Vapor pressures for gas phase charging are more easily maintained by warm water immersion.
- No heavy steel cylinders to lug around; no deposits to pay. Just throw the empties away.
- Contamination by moisture and noncondensable gases is avoided.
- Charging or recharging can be readily done away from the shop.

Investigate this revolutionary method today

Refrigeration Division
VIRGINIA SMELTING COMPANY
170 Jefferson St., West Norfolk, Va.



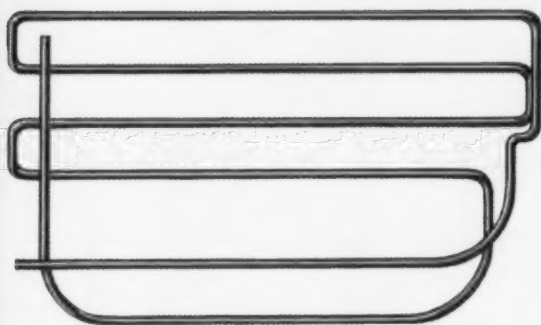
ESOTOC • KINETIC CHEMICAL'S "FREON" REFRIGERANTS • V-METH-L
CAN-O-GAS • PERMAGUM • PRESSITITE TAPE • KWIKWRAP • SUNISO
REFRIGERATION OILS • WATER TREATMENT CHEMICALS

Available in Canada and many other countries

For more information about products advertised on this page use Information Center, page 32.

PENN

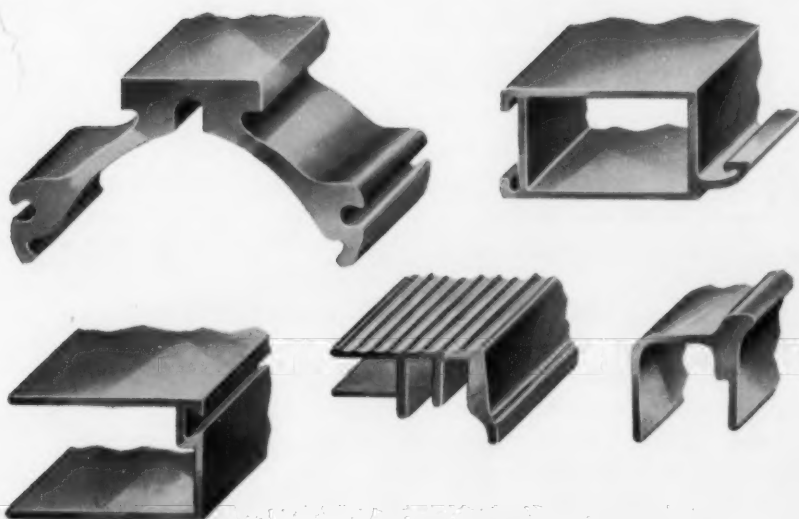
COMPONENTS FOR
PRODUCTS REQUIRING
TUBING and SHAPES



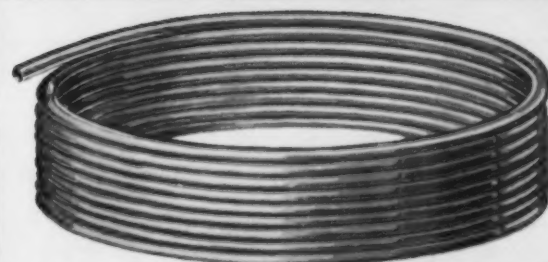
fabricated aluminum and copper tubing



straight aluminum and copper tubing



extruded aluminum shapes



coiled aluminum tubing—lengths to 2000 feet



coiled copper tubing






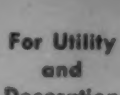









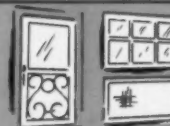



















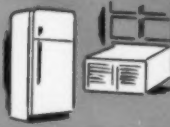



















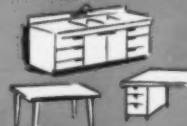


























PENN BRASS & COPPER COMPANY

GENERAL OFFICE and PLANTS: ERIE, PA • Phone 3-1164

PENN EXTRUSION CORPORATION

PENN Copper and Aluminum products improve performance and appearance . . .

| COPPER AND ALUMINUM TUBING | | | | | ALUMINUM EXTRUDED SHAPES | | | | |
|--|---|---|---|---|---|---|---|---|---|
| APPLIANCES | COILS | FUEL LINES | HYDRAULIC LINES | SPECIAL LINES | HOME EQUIPMENT | STRUCTURAL SHAPES | DECORATIVE TRIM | FUNCTIONAL TRIM | STRUCTURAL BASE |
|  REFRIGERATORS FREEZERS AND DISPENSING UNITS |  |  |  |  |  For Utility and Decoration |  |  |  |  |
|  RANGES (GAS and ELECTRIC) SPACE HEATERS |  |  |  |  |  DOORS WINDOWS AND SCREENS |  |  |  |  |
|  AIR CONDITIONERS DEHUMIDIFIERS |  |  |  |  |  RAILINGS THRESHOLDS |  |  |  |  |
|  WATER HEATERS |  |  |  |  |  REFRIGERATORS AIR CONDITIONERS FREEZERS |  |  |  |  |
| TRANSPORTATION | | | | | | | | | |
|  AUTO & TRUCKS |  |  |  |  |  RANGES WASHERS DRYERS ETC. |  |  |  |  |
|  MATERIALS HANDLING EQUIPMENT |  |  |  |  |  SINKS TABLES DESKS FURNITURE |  |  |  |  |
|  AIRCRAFT |  |  |  |  | AUTOMOBILES | | | | |
|  MARINE |  |  |  |  |  |  |  |  |  |
| UTILITIES | | | | | | | | | |
|  LP GAS EQUIPMENT |  |  |  |  | | | | | |

PENN PRODUCTS General Specifications

Seamless Copper Tubing— $\frac{1}{8}$ " O.D. through 1" O.D. furnished in straight lengths, coils, or fabricated. Temper as required.

Restriction Tubes—.026 I.D.—.090 I.D.

Extruded Aluminum Tubing $\frac{1}{4}$ " O.D. x .035-wall through 2" O.D. x .375-wall in specified alloys, and furnished in straight lengths, coils or fabricated.

Extruded Aluminum Shapes To section and alloy specifications, within maximum 4" sectional dimension.

Specify PENN for these important advantages...

CONSISTENT HIGH QUALITY is maintained on all PENN products through rigid quality control in all phases of specification, production, and shipping. The constant inspections made in this PENN "triple-check" provide customers with tubing or shapes that meet their specifications exactly.

OPERATING FLEXIBILITY at PENN insures customers of special consideration in meeting normal or exceptional delivery problems and in making unforeseen changes in production specifications.

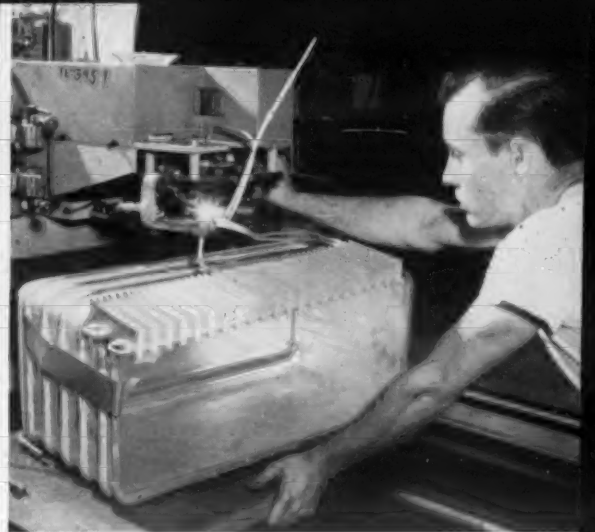
PRODUCTION ENGINEERING at PENN insures the BEST products for PENN customers through (1) application and use of "know-how" in both design and metallurgy, (2) constant improvement of techniques and equipment to reduce product costs, and (3) continual research and development to provide customers with new and better components for their products.



Penn keys the delivery of their quality copper and aluminum tubing to the customer's production schedules. Here, Penn fabricated evaporator tubing awaits brazing to evaporator sheets at Hotpoint's refrigerator plant.



This resistance welding operation joins the fabricated evaporator shell. Note that the Penn aluminum tubing has been curved again in forming the evaporator.



Here the cooling coil is joined to the evaporator tube. Penn precision eliminates production delays, keeps appliances moving off the production line.

building HOTPOINT refrigerators

... a typical application of PENN extruded aluminum tubing.

This Hotpoint case history is typical of many where Penn precision, high quality, and productive flexibility provide customers with copper and aluminum tubing that add to the performance and dependability of their appliances.



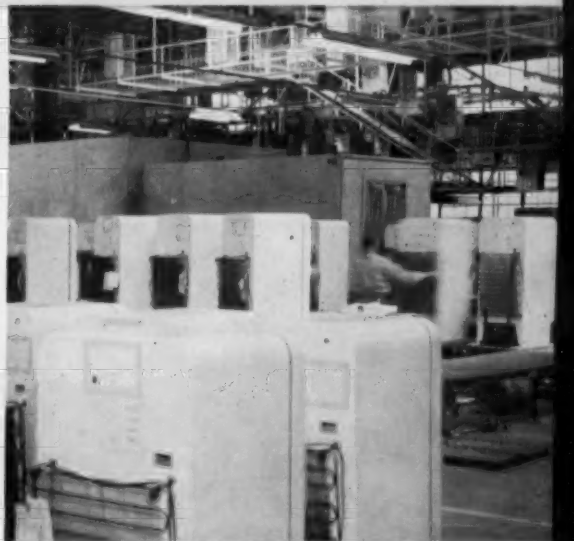
Almost completed evaporators show the configuration of Penn aluminum tubing on the evaporator shell.



This Hotpoint laboratory, where pump, evaporator and condenser units are tested, is a proving ground for Penn dependability.



The refrigerator takes shape... Penn Copper and Aluminum tubing has been incorporated in the unit where it will function in unseen but important roles in Hotpoint refrigerator operation.



Finished refrigerators passing through final check before shipping. High quality Penn Copper and Aluminum tubing used in these Hotpoint units will contribute to their fine performance.

PENN quality JOB-PAK tubing

The same high quality tubing PENN supplies to original equipment manufacturers goes into PENN Job-Pak tubing . . . making PENN jobber products of outstanding value to the refrigeration, air conditioning, LP-gas and automotive service industries.

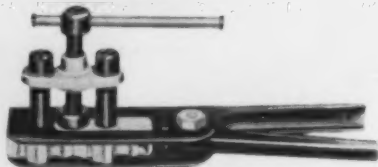


NEW PAPCO SUPERIOR TUBE TOOLS

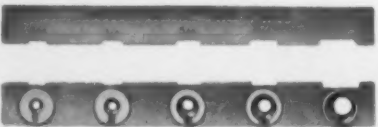
PENN offers these three efficient, time-saving precision tube tools:



PAPCO No. 500 Cutting Tool—for fast, clean, accurate cuts. Easy operation and efficient performance have made this tool the favorite of installers.



PAPCO No. 400 Flaring Tool — engineered for precision hand flaring, is adaptable to tubing of six sizes ($\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", $\frac{1}{2}$ "), and assures smooth, uniform flares.



PAPCO No. 400 AD Form-A-Gage — the new exclusive height gauge with double flare plate, five sizes in one ($\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ "), assures better double flaring and prevents tubing waste.

All three PAPCO tools are available individually or in the handy **PAPCO ZIP-KIT** — sturdy, convenient canvas carrying case designed to carry and protect Superior Tube Tools.

PENN easy-to-use JOB-PAKS feature . . .



• **CONSISTENT QUALITY**—When you specify PENN you specify tubing guaranteed to be dry • clean • flexible. Testing has proved PENN's superior cleanliness, rigid quality control maintains it.

• **PROTECTIVE PACKAGE SEAL**—guarantees against handling after inspection and packaging. Interlocking end locks in quality—locks out trouble.

• **STURDY PACKAGING**—corrugated construction protects the tubing in shipment.

PENN representatives at your service . . .

For your convenience and service, offices of Penn district representatives are located in principal cities. These experienced representatives are constantly at your service to provide information and materials that will aid you in solving your tubing problems.

Write or call the PENN representative nearest you . . .

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Ozone Park 16, N. Y.
Virginia 6-3280

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GEORGE WELLMON
633 Virginia Ave.
Erie, Pa.
4-6753

Pittsburgh
GEORGE H. CRAIG
718 Investment Bldg.
Pittsburgh 22, Pa.
COurt 1-3569

Dayton
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915 Valley St.
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ROBERT J. GASKILL CO.
18550 Mack Avenue
Detroit 36, Mich.
TUxedo 2-5095

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St. Louis 10, Mo.
FRanklin 1-1664

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Chicago 30, Ill.
ROdney 3-3636

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General Conclusions on Central Home Systems

'Must Please at Least 1 of 2 Persons on Comfort In Residential Job; System's Correct Capacity Is That Which Satisfies User'

COLUMBIA, Mo.—"The only thing you can say for sure about people is that they are all different," said Ralph Gonzalez, director, technical services, for Airtemp, in speaking on "Lessons from the Austin Village" before the University of Missouri Air Conditioning Conference.

And that's one of the major problems faced by sellers and installers of residential air conditioning, Gonzalez pointed out, because each individual is the sole authority on when he (or she) is comfortable.

"When you are dealing with groups of people, as in commercial installations, it is not too difficult to strike an acceptable medium of comfort conditions," said the speaker, "but in residential installations you've got to please somewhat exactly at least one of two people."

Gonzalez also defined the "correct capacity" of any system as "that which, when the system is operating properly, satisfies the user."

However, the speaker pointed out that studies made of many groups of people living in air conditioned residences, such as Austin Village, indicated that there are some general conclusions that may hold true about the kind of conditions that will prove generally satisfactory to those living in houses with central comfort cooling systems.

5 IMPORTANT POINTS

From the studies made among the residents of the Austin Village, the following were the important points discerned on operating conditions:

1. Continuous fan operation was found invariably desirable, if the coils were quick draining so that there would be a minimum re-evaporation of moisture into the air stream.

2. A variation or "swing" of more than 3° F. in the indoor temperature was usually "unfavorably noticed."

3. On the matter of the relationship of indoor to outdoor temperatures, the Austin Villagers seemed to desire an indoor temperature of no higher than 78° F., no matter how high the outdoor temperature might go.

4. Most of the residents would tolerate relative humidities in the range of 40 to 60%, if temperatures didn't go over 77°, and if changes in the relative humidity conditions were slow.

5. If the volume of air supplied was sufficient, nearly any type of air outlet into the conditioned space proved satisfactory, providing it was unobstructed. Floor and low-sidewall outlets that were obstructed in any fashion resulted in the kind of temperature gradients that proved unsatisfactory to the residents.

EMPHASIZES CONTRIBUTIONS TO 'BETTER LIVING'

Gonzalez reviewed briefly the special advantages found in air conditioned living by the residents of the Austin Village. While most of these have been well publicized, the point was made that the following contributions to "better living"

which developed because of air conditioning, should be emphasized. These were:

The family was together more.

Children spent more time at home.

All members of the family ate regular and better meals.

More restful sleep was possible.

There was less sickness than in non-air conditioned homes.

There was a greater sense of night-time security for the wife and children, because the house could be closed.

Air conditioning also proved it could cut living costs in many ways, it was shown through studies at Austin Village. Among the somewhat "unusual"

ways in which family living costs were cut were these:

Amount of laundry that needed doing was cut nearly 50%.

Re-decorating costs were virtually eliminated. Less dusting and cleaning.

An average of \$5.80 less per week per household was spent on outside activities and entertainment.

Going into a discussion of air-cooled units as used in residential air conditioning work, Gonzalez stated that it had been generally found that air-cooled units realized a higher capacity in actual field service than the rating they got in laboratory tests.

One probable reason for this,

he said, was that the lag in heat transmission effect in a home, which often put the peak load at 7 p.m. or later, at which time the ambient temperatures at which the condenser was operating might be considerably lower.

Questioned as to whether in a unit backed up to a house, the condenser would operate as well as one installed with nothing around it, Gonzalez said it would if sufficient quantities of

air were moved through it. Air-cooled condensers which are installed outdoors tend to stay cleaner, and the fan blades don't gum up, but there is an over-all corrosion factor stemming from the weather.

Units mounted on wooden platforms tend to be noisier than those mounted on concrete, the speaker said. One way to provide quieter operation is through trapping of the return air.

**"OFF-CYCLE" DEFROST
MADE OBSOLETE!**

**with new economical
system for Fresh Foods!**

See **KRAMER** advertisement,
center spread, in next week's **NEWS!**



He's on the dance floor every morning at seven!

The floor beneath this skilled worker's feet is a unique feature of General Electric's new Tyler, Texas plant where whole-house air conditioning equipment is built. Made like a dance floor of tough hickory planks laid edge-up instead of flat, it's periodically varnished to a gleam and vacuumed twice daily. Dust from a surface like this just can't be scuffed up to mar precision-machined components.

And it's here that compressors—heart of General Electric central system air conditioning—are assembled and hermetically sealed. The room itself is temperature-humidity controlled, workers wear lintless smocks and goatskin gloves to safeguard each step. Extraordinary steps these—but the result is a compressor of unsurpassed workmanship that contributes greatly to the overall excellence of General Electric air conditioning equipment.

Quality control is the keynote at all General Electric plants. To dealers, it means General Electric Home Heating & Cooling Systems are quality products that can be installed with complete assurance of customer satisfaction.

Free! Promotional Sales Aids For Dealers! Cooling Program Sales Power Pack #1. Loaded with powerful sales material—hard-working ad mats, radio and TV spots, and a direct mail campaign that seeks out your best prospects. Write your local distributor or General Electric Home Heating and Cooling Department, Tyler, Texas.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Selling for Profit—(In Residential Air Conditioning)

Market 'Not Competitive' at Retail Level
But Competition 'Terrific' at Mfrs. Level

By Frank Klein

Stand clear of the tracks men—my opinion on the statement that "residential cooling is a competitive market" is going to highball through the block signals, for in my opinion such an all inclusive statement is WRONG!

When we use the words "Competitive," "Competition," "Competitor," and the like, we unconsciously cover much more area than we really mean, and at the same time do it from a narrowed viewpoint. Usually this narrowed viewpoint stems from PRICE in better than 95% of the cases.

To really understand what we say in context when we refer to a Competitive Market, or a Competitor, etc., we should

really know the actual meaning of these various words we toss around with conviction, and usually in desperate disgust.

Take the word "COMPETITION." Webster defines the word as:

"A contest between rivals—a Match. Commercial, the effort of two or more parties, acting independently, to secure the custom of a third party through more favorable terms."

Or, take the word "COMPETITIVE." Webster defines the word as:

"Of or pertaining to competition; based on, used in, or resulting from, competition."

Webster sums up "COMPETITOR," as:

"One who competes as; (Spec) one who is engaged in selling (or buying) goods or services in the same market as another."

Thus if we boil all of these down we have an abstract something like this:

1. A contest between two rivals,
2. Competition,
3. The goods or services of a third party, in the same market, or the custom of that third party, in the same market, as another whom we call our Competitor.

This series of articles is for those who seek to know the basic "appeals" and principles in selling residential air conditioning. This is the tenth article in the series which began March 18.

Frank Klein has been associated with the air conditioning and refrigeration industry for over 20 years. He has held executive sales positions with a number of air conditioning manufacturers. At present he is a partner in Heidenreich, Klein & Associates of Dallas, marketing specialist.

However, the usual connotation you and I put in phrasing and use of these words, in alluding to the existence of a "competitive market," more often than not, is nothing more than our expression of our inability to cope with THE TACTICS of others more successful in competing for the custom of the third party, whom both our competitor and ourselves have tried to bag.

Once again I offer the observation that we generally surround our statement with a connotation stemming from the word PRICE... which we subconsciously associate as a syno-

nym for all three of these words above and their use in our statement.

But isn't it obvious that, if the word "PRICE" were synonymous with the word "COMPETITIVE," only the lowest priced article on the market would be sold?

There exists many levels of competition where two competitors, acting independently of the other, compete to secure this custom. And I point out that these levels involve only PRICE as one of many.

How about the fellow who, though having a higher PRICE, can offer more VALUE? Or, how about the fellow with a higher PRICE but more lenient PURCHASING TERMS? Let's not forget another fellow who, though having a higher PRICE, offers more attractive SERVICE features and possibly an installation that more ideally suits the desires and needs of the customer.

We can't leave out the fellow who has a higher PRICE but offers better reputation, workmanship and service integrity, and financial stability. How about the fellow who has a high PRICE, and who is a close personal friend of the customer?

Ask yourself these two questions.

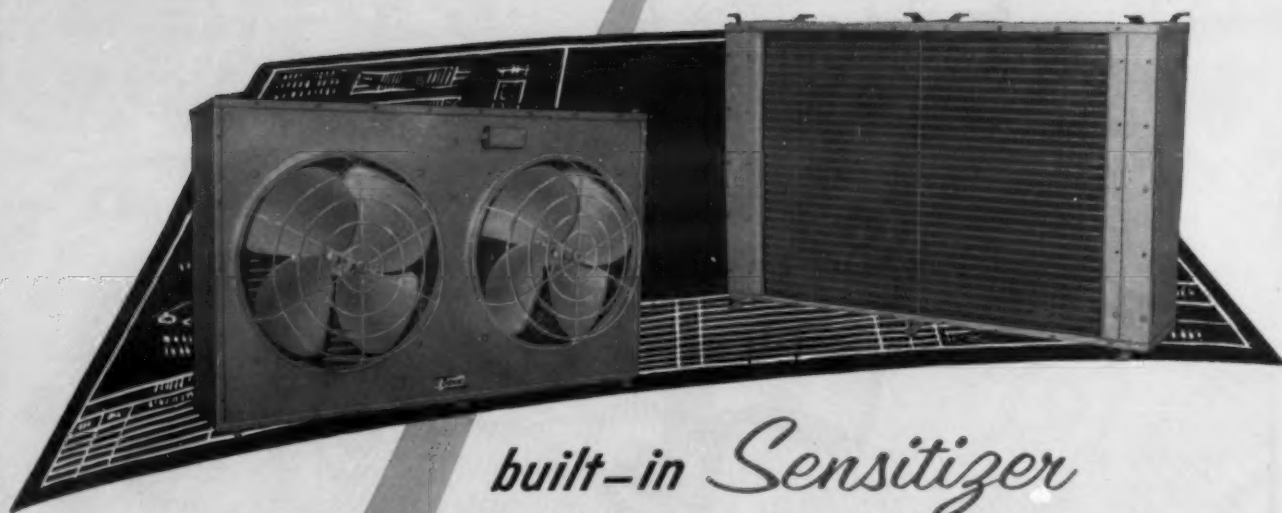
1. How many of you have made a sale to a customer who had neither approached a competitor for price, or asked for competitive bids? In other words a sale where you actually "cold turkeyed" the call and talked a customer into buying air conditioning when he hadn't even arrived at the point to where he knew it was possible for him to have it?

2. How many of you have consistently made sales with higher priced products on the basis of quality, in face of lower "competitive" prices, without having the prospect any more acquainted with you and your product than he was with your competitor and his product?

Let's not kid ourselves in answering these questions; if a poll were taken (and I have taken such a poll at many, many meetings where these questions were posed), there would be very few hands in affirmative. Thus I point out once again that the Residential Cooling Market as it stands today, is NOT a competitive market in the pure and business method of market conception.

Resistance and Aggression, in
(Continued on next page)

BOHN Presents the NEW ANGLE in Air-Cooled Condensers



*Reduces Cost
and Simplifies
Installation*

*built-in Sensitizer
maintains proper head pressures*

BOHN engineers have developed a winter controlled air-cooled condenser equipped with built-in sensitizer to maintain head pressures when outside air temperature drops... eliminate hand valves in the control system... simplify piping.

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Of finest quality, new BOHN air-cooled condensers are economically priced. They offer sturdy, rust-resistant construction in grained aluminum cabinet housing... trustworthy capacity ratings... famous Betz coils... fans which operate quietly... life lubricated ball bearing motors with thermal overload protection.

Read full details on the NEW ANGLE in air-cooled condensers. Reserve your free copy of the new BOHN CATALOG BU-1.

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Selling Residential Cooling--

(Continued from preceding page) my mind, are synonymous with Competition. Resourcefulness and Determination are equally synonymous. PRICE is merely a predetermined amount for which a thing can be bought or sold.

You and I are COMPETITORS only when we are competitive from the level of our own product as against the level of that of our competitor's product; when we can offer, in competition for the custom of a Third Party, BENEFITS, regardless of their category, that equal and transcend those offered by our competition. You and I can only succeed in a Competitive Market when we are convincing in our story that the BENEFITS we have to offer are more desirable than those of our competitor.

To be a COMPETITOR we have to have a burning desire to BE THE BEST MAN among our competition. Many of us remember the story told by Lou Holtz, about the successful sales manager who went into a famous sea-food restaurant in Philadelphia and ordered lobster. After a short wait the waiter brought out what he considered to be the best in the house.

The sales manager, whose living word and life had been built on a foundation of FIGHT, took one look at the lobster and said:

"This lobster has only one claw. I told you I wanted the best in the house."

The waiter, looking flustered and somewhat indignant, finally managed to reply, "That, Sir, is the best lobster we have, and I wish to remind you that we serve only the best of everything in this restaurant."

The sales manager let a smile steal over his face for a moment then sternly said, "Mister, when I order the best, I want the best. This lobster has evidently been in a fight and has lost his one claw. Take him back! I want the WINNER, not the LOSER!"

So much for the inspirational.

In a market of free enterprise, products offer themselves for sale, each being inherently different from the other; each product or line of products offered in COMPETITION with others... but each possessing its own Feature Aspects and BENEFITS to the customer or consumer.

It must be recognized that each manufacturer's conception of Feature Aspects and Benefits result from his conception of their VALUE to the sale of his product in relation to the desire of the customer or consumer. Thus it must be further recognized that the PRICE asked for various lines of products, or a product, manufac-

tured to be sold in COMPETITION, is in direct relationship to the manufacturer's concept of this VALUE.

Let us assume a normal situation where for instance there are two lines of products aimed at the same market. The two are unequal in PRICE, yet the both are offered in COMPETITION for sale. Thus they are both COMPETITIVE from the standpoint of THE PURPOSE INTENDED, that is, both lines will accomplish the results for which they were designed.

Now let's analyze this again, for there is a broken line of analogy from here on. Though both will accomplish the same results, for which the both of them were designed, THEY ARE PRICED DIFFERENTLY.

This is pretty much the situation in the Residential Cooling Market. Though I repeat that

the Residential Cooling Market is NOT a COMPETITIVE MARKET at retail consumer level, today's residential cooling products are terrifically competitive — AT MANUFACTURER'S LEVEL! Let's qualify this statement a shade farther and say AT MANUFACTURER'S LEVEL AMONG RECOGNIZED, EXPERIENCED, AND ACCEPTED MANUFACTURERS.

Yet these same manufacturers generally agree and are extremely concerned with the fact that though their products are highly competitive at their own level, there is a TERRIFIC LACK OF COMPETITION AT DISTRIBUTION AND RETAIL LEVEL.

These manufacturers recognize and are concerned with the fact that almost the entire "Competitive" Market for their products at retail level is being controlled by PRICE and PRICE ALONE! They know—and they are perfectly right—

that they and their products are not getting a fair shake at distribution and retail level.

Why do they feel this way? What are the undeniable signs that indicate this feeling? Because sales and field surveys show that the ammunition, the very same variables in concept and design and feature aspects, that differentiate their products from another's; design and feature aspects that are built into their product to secure their share of the market on an unequal PRICE basis—ARE NOT BEING USED as tools in competitive type selling.

Of what value are the millions of dollars being spent by manufacturers for national advertising, if through sheer antipathy on the part of dealers and salesmen it is being used only as a CRUTCH to uphold or originate a DESIRE, created by specific appeal, in the name of THE MANUFACTURER? These manufacturers are deeply con-

cerned with the fact that their advertising is not being used to synonymize names of their outlets with their own and their product.

You and I should be a darned sight more interested in establishing our own firm names, than the trade name and manufacturer. Advertising by manufacturers is intended to bring about thought association, in which should be the association of our firm names with that of their product, with the emphasis on our own.

Of what value are the millions of dollars spent by manufacturers in building in Plus Feature Aspects, if through the same antipathy, such Plus Feature Aspects are unsung and unused? If the manufacturer built these into a product his concept was based on an offering of additional value—value that would overcome PRICE OBJECTIONS, and act as an equalizer (Continued on next page)

NOW!

Curtis

PACKAGED UNITS

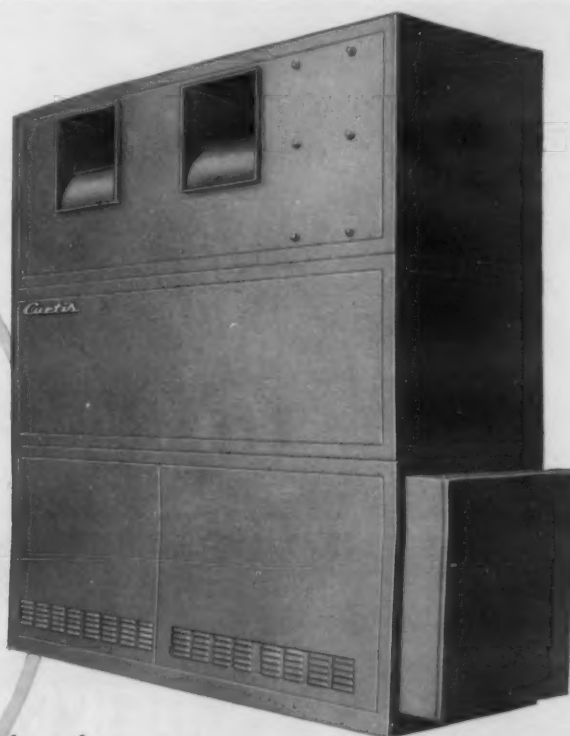
Up to 50 Tons

OPENS

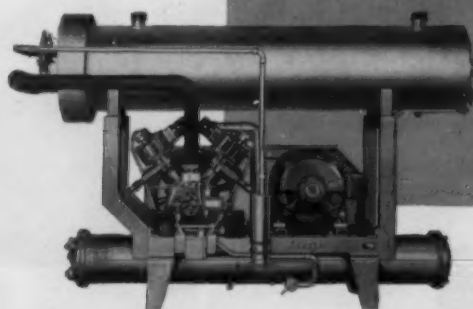
NEW MARKETS FOR PACKAGED AIR CONDITIONING

No question about it. The new 50-ton Curtis packaged air conditioner will open a new sales front for you. Architects, engineers and owners prefer packaged units for important reasons:

- Big package units are line assembled—does away with expense of field labor. Assures a BALANCED SYSTEM.
- Packaged units are easier to install—take up less space.
- Cuts down installation problems and maintenance costs.



IMPROVED PACKAGED LIQUID CHILLER... FOR WET HEAT SYSTEMS



up to 100 tons—

With all controls in single panel box for easier access and greater protection! Four step capacity control—unloaded starting available. Particularly desirable where year 'round conditioning of multiple individual rooms is required.

REMEMBER, every Curtis unit is backed by a solid 103 years of experience and skill. Curtis offers a

complete line of air conditioning equipment—nationally advertised to help you sell.

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OUR 103rd YEAR



New Curtis Packaged, Air Cooled, Air Conditioning Units, 3 thru 7 1/2 tons. Residential and commercial applications.



Condensing Units up to 100 tons. F-12 or F-22.



Air Handling Units, Cooling Towers and Evaporative Condensers to match.

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PRECISION QUALITY SINCE 1935

Selling Residential Cooling--

(Continued from preceding page)
against products of lower price but without the plus Feature Aspects.

Of what value are these Plus Feature Aspects, if through the lack of Salesmanship such additional Value is left impotent?

Manufacturers of our products can only appeal through us for a place in a competitive market. If we don't learn how to compete, we both suffer. Look around and notice the threatening trend of some manufacturers to sell their products direct to consumer, with supervision by their own field staffs and often their own installment crews, then figure where the leak in the dike is. After all, you don't keep unproductive labor on the payroll for long.

To those reading this who are established air conditioning outlets or heating outlets, or trying to be both—batten the hatches! Retail Appliance outlets, realizing the terrific sales tie-in opportunities of residential cooling and heating with washers, dishwashers, kitchen equipment, and other major appliance items are getting on the bandwagon.

This is especially true since the appearance of "add-on" type central cooling. Where appliance outlets lack the installation and service experience, they are making contractual arrangements with independent service and installation organizations to handle this end of the sale.

The pure SELLING is something the good appliance outlets are well experienced in—furthermore they know and

have the financing resources and know-how. This type of outlet knows SALESMANSHIP and is used to selling in a competitive market. Do you and I think we can do less?

Do you know that national surveys show that better than 62.6% of the appliance outlets in this country today, doing an annual volume of \$75,000 or more finance their own sales—handle their own paper? This is the MERCHANDISING APPROACH, about which I have been so persistent in pounding home as a necessity to success in the residential cooling field.

Let me leave you for the time being with this thought as expressed by Hughston M. McBain, board chairman at the time of Marshall Field & Co. of Chicago, who in speaking of Competition, recounted the application of the "Old Mousetrap Story." Said McBain:

"Superficial observers think because businessmen have money, or capitalists furnish money, that they are supreme. On the contrary they are bound to obey unconditionally the Consumers orders, for he is the real 'Captain' of the ship.

"They cannot for long determine WHAT to produce, HOW MANY to produce, or SELLING PRICES—the Consumer does that. Every successful businessman knows that if he does not obey the orders of the Consumer, if he does not SERVE the Consumer by manufacturing WHAT he wants, and in so doing offer it at PRICES the Consumer will pay, he will suffer losses, eventually go out of business, and be completely removed from the field of competition. That others who do these things will prosper and replace him.

"It is the Consumer who de-

cides what companies will fail and those that prosper. The Consumer is a whimsical Boss, full of whims and fancies—changeable and totally unpredictable.

"When he sees something and buys it, he doesn't care an iota about anything but its VALUES and BENEFITS to him. If something is offered to him tomorrow having more VALUE and BENEFITS to him, he will desert his old supplier at the drop of the hat.

"The old mousetrap story was true a hundred years ago and is still true today. If we make the best one, and it is priced right, AND we serve a thousand Consumers—we prosper. If we in turn serve a MILLION Consumers, and do it better than our competitor, we prosper a thousand-fold. The businessman prospers in this fashion not because of capital alone, but because he serves more people than his competitor, satisfies their wants and is of help to them.

"It is the same with labor, sales outlets, and sales people who sell their services. Those who work best, work hardest, do more than is expected of them, cannot but help prosper more. All of us know that the most difficult thing in merchandising goods for sale today is getting enough people to do well what is expected of them, and eventually do it better than is expected of them. Those who keep it up are rewarded with greater opportunities—as well as responsibilities. In other words it is under the driving power of COMPETITION, in free enterprise, that man can reap the rewards of proper human behavior."

Residential Cooling can BE a Competitive Market—but only if YOU and I make it so.

(To Be Continued)

SO HALSTEAD & MITCHELL ENGINEERS SAID:

**NOW - YOU CAN BUY
AN AIR-COOLED
CONDENSER
WITH LIFETIME
HIGH CAPACITY**

TURBU-FLO FINNED COILS WON'T CLOG



Here is the industry's finest air-cooled condenser using the exclusive non-clog "Turbu-Flo" finned coil. In this most efficient Halstead & Mitchell design, wide fin spacing prevents

the coil clogging with air-borne dirt and other particles which cause a quick loss in condenser capacity. Thus, Halstead & Mitchell's high condenser capacity is built-in, for lifetime operation.

As a best starting point, Halstead & Mitchell uses a generously big coil, with fins spaced 6 to the inch. This means a low pressure drop, which in turn means high operating efficiency. The "Turbu-Flo" fin itself contributes to an extra-measure of heat transfer, providing a marked turbulence of air flow over the finned surface. This results in increased heat transfer due to lowered air film resistance. Thus, there's a generous reserve of capacity in these Halstead &

Mitchell Air-Cooled Condensers—capacity which will stay high for the life of the unit.

The exceptionally rugged construction, the manifold for easy multi-circuiting, and the right price make Halstead & Mitchell air-cooled condensers preferred by contractors everywhere. More details are yours for the asking—write for free Condenser Bulletin. Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.

AT LEADING WHOLESALERS EVERYWHERE



MAKE YOUR OWN SCALE REMOVER with VAPCO-HIB Acid Inhibitor

Just add it to muriatic acid. Gives fast, low-cost descaling with unbelievable safety to metal surfaces—even galvanize! Combines efficiency of muriatic acid with safety of a dry powder cleaner.

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the right man for a
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Ads are read by your
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Place your ad today!

Warm Air Summer Convention--

(Concluded from Page 1)

vention has been set at \$15 per person. This fee includes admittance to all sessions, the cocktail party on Wednesday, and the luncheon on Thursday.

Program will get under way at 1:30 p.m. Wednesday. It will continue with morning and afternoon sessions through noon Friday, finishing up with a golf tournament at the Merced Golf & Country Club on Friday afternoon.

Panel discussions have been slated for Wednesday and Thursday afternoons and Friday morning. They will cover mutual problems of builders and heating and air conditioning contractors; sales engineering, installation, controls, and service; and promotion and merchandising for dealer-contractors.

WEDNESDAY, JUNE 5

9:30 a.m. to 12 noon—Registration in the lobby.

1:30 p.m.—Afternoon session, Venetian Room.

Convention general chairman, J. F. Deane, vice president and general manager, Tuck-Aire Furnace Co., San Francisco.

"Welcome to San Francisco," G. J. Christopher, mayor of San Francisco. "Outline of Problems Facing Industry," F. L. Meyer, president, NWAHACA, and presiding chairman at this session.

"The Unexploited Market," C. W. Nessel, Minneapolis-Honeywell Regulator Co.

3 to 3:15 p.m.—Intermission. "Costs! Do You Know Yours?" M. E. Sale, credit manager, Slakey Brothers, Inc., Sacramento, Calif.

Panel Discussion: Mutual Problems of Builders and Heating and Air Conditioning Contractors.

Moderator: R. R. Taylor, Fraser & Johnston Co.

Builders: I. C. Jordan, Los Angeles; A. F. Oddstad, Redwood City, Calif.; Duke Newby, Portland, Ore.

Contractors: D. S. Will, Southland Heating & Air Conditioning Co., Inc., Long Beach, Calif.; Harold Boothby, Boothby Sheet Metal, Sacramento; Al Briggs, Portland Sales & Service, Iron Fireman Mfg. Co., Portland.

6:30 to 7:30 p.m.—Cocktail Party, Terrace Room.

THURSDAY, JUNE 6

9:30 a.m.—Morning session, Venetian Room.

Presiding: Merrill Rutledge, president, Associated Sheet Metal Industries, Inc.

"Perimeter Heating and Air Conditioning," Ing Remen, Pacific Coast manager, Lennox Industries, Inc.

"Certified Heating," N. N. Leas, president, Sheet Metal and Air Conditioning Contractors National Assn.

"Wholesalers' Place in the Warm Air Heating Industry," G. A. Ashburn, president, National Heating and Air Conditioning Wholesalers Association.

"What's Doing on the Pacific Coast?" R. N. Hall, president, Institute of Heating & Air Conditioning Industries, Los Angeles; D. M. Keefer, president, Portland Warm Air Heating & Air Conditioning Association; and Dar Knowles, executive manager, Warm Air Heating Institute of Northern California, San Francisco.

"Opportunities in Air Conditioning through Education," Dr. Harold P. Hayes, dean of the School of Engineering, California State Polytechnical college.

12:30 to 2 p.m.—Luncheon, Gold Room.

"Breaking the Brain Barrier," Tyler Macdonald, vice president, Hixson-Jorgensen, Inc., Los Angeles.

2:30 p.m.—Afternoon session, Venetian Room.

Presiding: R. N. Hall.

"Consumer Attitudes Towards Air Conditioning," H. T. Gilkey, technical secretary—research, NWAHACA.

Panel Discussion: Sales, Engineering, Installation, Controls, and Service.

Moderator: E. A. Myers, vice presi-

dent and general manager, Prentiss Corp., Los Angeles.

Southern Calif.: S. F. Skafte, director of engineering, Utility Appliance Corp., and H. A. McIntosh, chief engineer, Control Systems Div., General Controls Co.

Northern Calif.: Jack Ward, Edward B. Ward & Co., and L. A. O'Meara, mechanical engineer, Sacramento.

Pacific Northwest: E. E. Carroll, Kleenair Furnace Co., and Albert Freeman, Western Engineers, Inc.

FRIDAY, JUNE 7

9:30 a.m.—Morning Session, Venetian Room.

Presiding: A. P. Fischer, president, Warm Air Heating Institute of Northern California.

"The Terre Haute Story: What Proper Advertising Did for an Average-Size Warm Air Heating Contractor," F. J. Nunlist, Jr., executive vice president, Mueller Climatrol, Div. of Worthington Corp.

Panel Discussion: Promotion and Merchandising for Dealer-Contractors.

Moderator: R. A. Nelson, director of public relations, NWAHACA.

"How and When to Advertise," Charles Cashion, director of sales, Scott-Choate Publishing Co., Inc.

"Dealer Merchandising Budgets," C. M. Barnes, editor, American Artisan.

"Use of Merchandising Aids," T. W. Ohliger, Sunset Magazine.

Residential Air Conditioning



SAVE 2 WAYS WITH FURNAS "IN-BETWEEN" STARTER SIZES

LOWER COST—save up to 25% by buying the exact size starter for the job, instead of having to take a standard one that may be too large.

LESS SPACE—save up to 40% by selecting a compact starter of a size designed to fit your requirement.

Furnas offers you 10 Magnetic Starter sizes instead of the usual five—5 standard and 5 "in-between" sizes. The "in-between" sizes allow you to choose the control that is exactly suited for your particular job when a standard size is not quite right. No need to waste money or space on a starter that is too large.

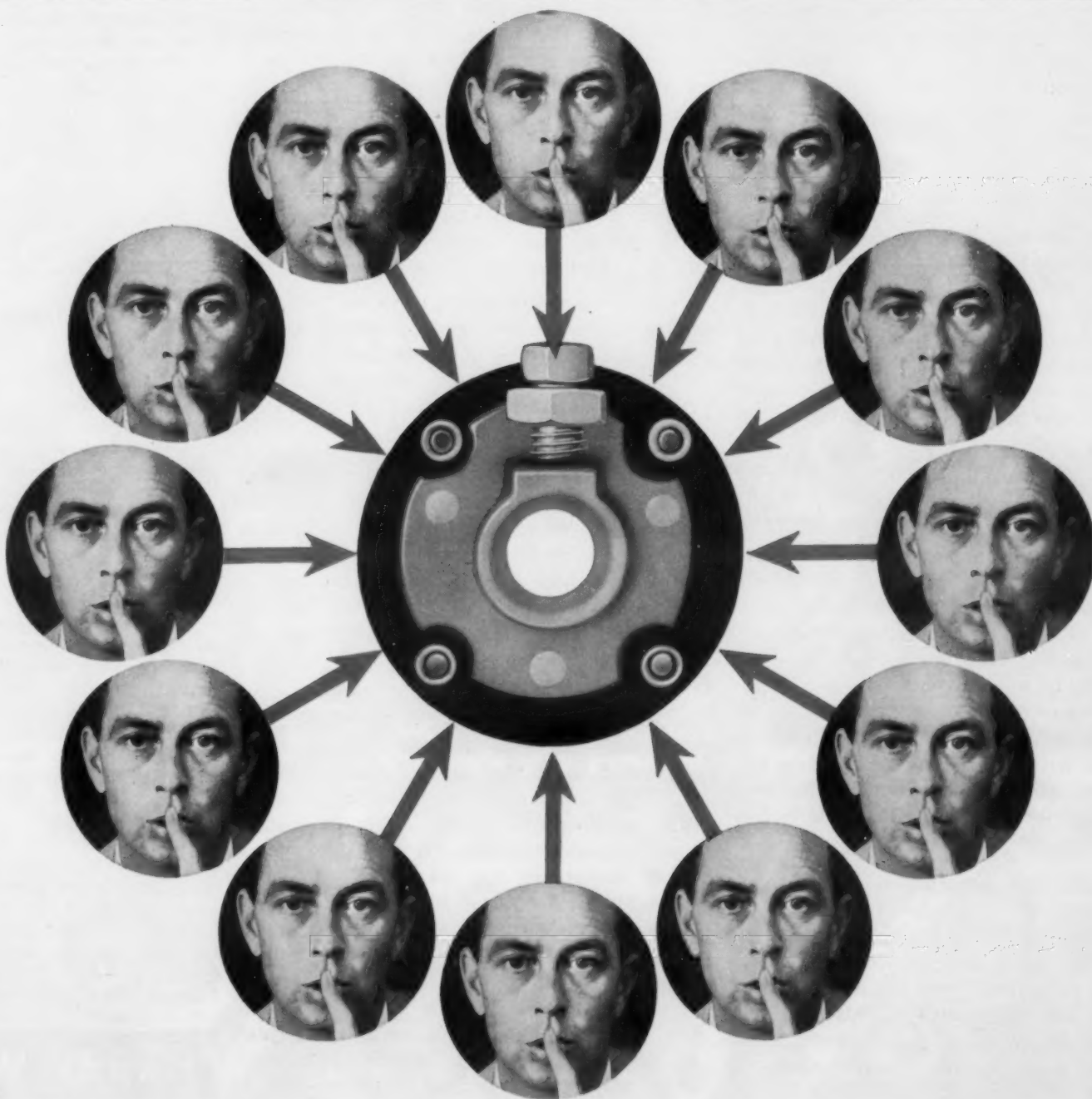
For information on our complete line of air conditioning and refrigeration controls, write for Bulletin 5519. Furnas Electric Company, 1111 McKee Street, Batavia, Illinois.

A32



FURNAS ELECTRIC COMPANY
BATAVIA, ILLINOIS

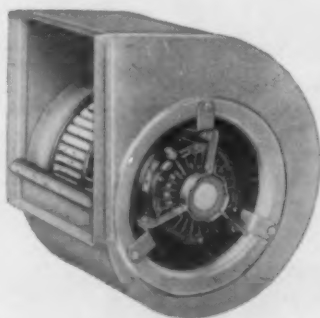
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SILENCE IS THE HUB* OF THE MATTER

***NEOPRENE** Here at Utility we take a meager view of noise... believe it has no place at all in our Direct Drive Blowers. But licking the problem of noise was a challenge, and a tough one. The key point of noise is the blower hub. What material could be used to give it all the qualities of lifetime service, yet provide quiet operation under all conditions? We found Neoprene to be the ideal material to shush noise. How to build that Neoprene Hub was and is the "secret of silence" of all Utility Direct Drive Blowers. This silence factor has boosted sales for manufacturers of heating, cooling, refrigerating and ventilating equipment the country over. Just another example of go-ahead planning, years-ahead engineering that makes Utility the firm to consult when considering only the best in blowers and parts to fill your manufacturing needs.

YOU CAN'T MATCH UTILITY FOR PRODUCT AND PRICE! Manufacturers of heavy and standard duty blowers for heating, air conditioning and ventilating installations. Producers of blowers and blower parts for original equipment manufacturers. Write for catalogue data.



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**OFF THE CHEST****OLD TIMER ADDS TO BRIEF HISTORY**Westinghouse Appliance
Sales Corp.

Long Island City, N. Y.

Editor:

As an old timer I enjoyed your brief history of the Refrigeration Industry as it appeared in "Inside Dope."

I'll lay a bet Kelvinator has already burned your ear over your statement that Nizer and Isko were forerunners of their organization. As a matter of fact both Nizer and Isko were splinter groups from the parent Kelvinator. The Copeland machine and Ed Copeland also was an offshoot.

I think a little space should be given to the men who promoted and financed the development of this Industry. You mention Harry B. Joy but forgot Carl Fisher who was associated with him when together they sold Isko to A. Y. Gowan of Lehigh Portland Cement in Chicago. At the same time Doc. Parkin and Mr. Wolf had their herringbone gear compressor on

the market in Chicago under the trade name Frostmaker. This the good Doc sold to the new owner of Isko and we were off to the first big promotion in 1915. As proof that the market was always ahead of the product, Isko had commitments from distributors for well over 20,000 units before the machinery was moved in or the factory was ready to turn a wheel. That was a lot of business back in those days.

Isko went down to the tune of 7 or 8 million. Meanwhile, Howard Dennedy was about ready with his high-side float and pressure control with which to control cabinet temperature. The Hercu's Co. in Evansville, maker of farm gas engines, became interested in Dennedy. They, together with some Sears officials and others organized the National Electric Products Corp. in Chicago and started building the Servel machine in 1921-1922.

(Concluded on Page 29)

Handy Way to Subscribe**To See the Industry In Action EVERY WEEK**

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, heating, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the Industry's newspaper for profit every week. Only \$6.00 per year, 52 issues (U.S. and Canada). Foreign: \$10.00 per year.

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IMPORTANT: Company's Type of Business.....

They'll
Do It
Every
Time

by

Jimmy
Hatlo**ARI Deserves Congratulations**

Industry associations often are accused of being mere debating and goodfellowship societies. Too regularly for comfort that allegation comes true. In contrast, everybody in our industry should be proud of the Air-Conditioning & Refrigeration Institute, and the record of accomplishment it has produced recently.

George Jones, its patiently brilliant guide, submitted a progress report to the recent annual meeting in Hot Springs which deserves applause and commendation. In fine, Mr. Jones summarized a number of signal achievements of the organization he manages. Of major importance, he observed, is the progress made in development and revision of standards for air conditioners. Even more significant is the increased use and recognition of these standards by nearly every manufacturer in our industry.

For instance, the publishing of cooling capacity ratings by room air conditioner manufacturers is almost unanimous today. Other so-called "compliance programs" indicate that the increased service of a technical or engineering nature rendered by ARI are invaluable to the industry at large. Continued and improved relations with RSES, ARW, and with ASRE and ASHAE as well as other trade associations and professional societies, are progressing silently but effectively, too.

An ambitious program in this field is the creation of a movie-TV film on air conditioning jointly sponsored by ARI and ABBB. The script has been completed, approved by committee, and the ARI Board of Directors has determined to raise \$125,000 to finance it—by solicitation among members of our industry interested in educating the public. It is designed primarily for TV audiences; it will be printed in color; it runs about 27 minutes, will occupy a 30-minute period on TV, and will be promoted by the 110 local Better Business Bureau offices, who can assure contributors of a great amount of "public service" television time at no further cost to the industry.

As the major sponsor of RISAC, this association is taking a leading part in the development of a Draft of Municipal Ordinance for the Installation and Service of Air Conditioning and Refrigeration Systems—to be submitted for consideration to those communities planning such an ordinance. Importance of this effort to local contractors simply cannot be overestimated.

The Foreign Trade Committee of ARI

has been working with the U. S. Bureau of Census to restore Schedule B (a desired method of compiling statistics on products of our industry sold abroad, as compared to the present curtailed form known as Schedule G). This committee also is working with the American Standards Association in connection with a proposal by the International Standards Association to set up international standards for refrigeration and air conditioning.

"Serious consideration is being given to creation of a committee or committees interested in export of components as distinct from the present major interest in end-products by our Foreign Trade group," Mr. Jones reported.

Impressive results have been registered by ARI in bringing to the attention of the Federal Housing Administration actual facts having to do with the costs, operation, and maintenance of air conditioning in residences for which they insure mortgages. This problem has been thorny for local air conditioning dealers.

All these activities (and many more) become the property of all members—and at much less cost than if each member attempted to do that sort of work for himself. "It is difficult for a single manufacturer to do an adequate job in promoting the services rendered by, for instance, a water cooler, an ice cream cabinet, or a room air conditioner," Mr. Jones observed. "Certainly there is a need for selling water coolers as such. There is need for selling more ice cream through the use of more ice cream cabinets. There is need for selling the very idea of air conditioning. This can be done collectively in all fields through cooperative endeavor in a progressive trade association."

ARI is a prime example of a trade association which does this sort of thing well.

The NEWS wishes to commend especially the outgoing ARI President, Matt Lawler of Worthington. With forceful diplomacy he pushed through an admirably adroit standards-compliance scheme. Men of smaller stature might be arguing 10 years from now about what to do and how to go about it. Lawler saw what needed to be done, figured out how to do it. With the aid of George Jones's deft diplomatic talents, and a high-minded Board of Directors, Mr. Lawler did a tremendous job for the benefit of our entire industry.

SELL

WESTINGHOUSE

...the only

"REALLY-NEW"

air conditioning line for

1957

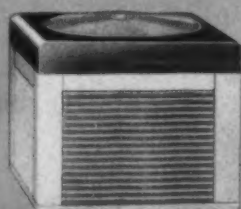
TAKE A LOOK...



**FOR
RESIDENTIAL
SALES!**

You get

...FROM



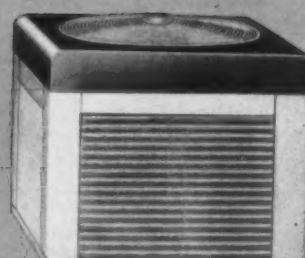
BUDGET 301

*18,500 to 23,000 BTU/Hr.



SUPER 352

23,500 to 32,000 BTU/Hr.



BUDGET 401

32,000 to 39,000 BTU/Hr.

*Lower Figures are ASRE Ratings

Now, you've got the edge over competitors who *try to sell* all prospects, regardless of need, with old-fashioned 2, 3, and 5 HP units. While other manufacturers give you but 3 inflexible units — Westinghouse gives you 7! You get a complete cooling range from 18,500 to 86,000 BTU's per hour in a twin price line of Budget and Super cooling models. Air cooled, they need no water . . . easy to install outside the house, they waste no living space . . . whisper

quiet, they cool automatically. What's more, they combine with any forced warm air heating system — using the same ducts — to give economical year-round air conditioning. And remember, these units are perfect for many commercial installations, too. So, wherever you sell, whoever your customer . . . you can price, sell and install the one unit that is "just right" for the job, and you can do it at a profit!

THE RIGHT COOLING UNIT FOR EVERY HOME AND BUDGET



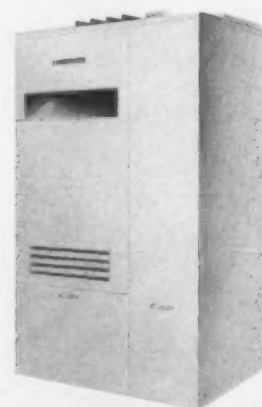
EASE-MASTER UNITS

For hide-a-way installation in attic, utility room or suspended from ceiling. Air cooled, delivers 18,000 to 34,000 BTU's per hour.



FLEX-MASTER UNITS

Ideal for the larger home in extra hot climates. Air or water-cooled, delivers 30,000 to 110,000 BTU's per hour.



VALUE-MASTER UNITS

Heat and cool—automatically! Available with oil or gas-fired furnace unit. Cooling range 24,000 to 38,000 BTU's per hour. Gas-input 90,000 to 130,000 BTU/Hr., output 84,000 to 112,000 BTU/Hr.

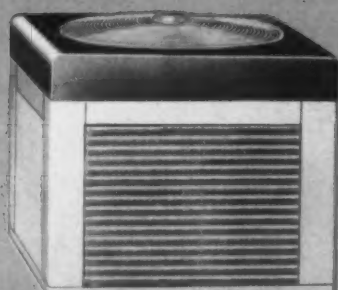
"just right" cooling

BUDGET 301 TO SUPER 802!



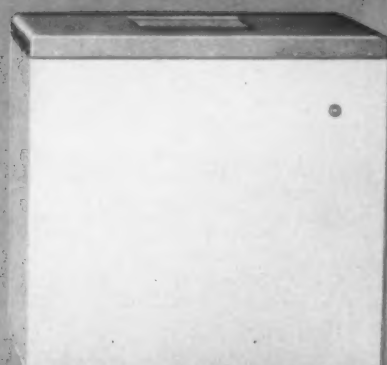
SUPER 452

36,500 to 50,000 BTU/Hr.



BUDGET 601

50,000 to 62,000 BTU/Hr.



SUPER 652

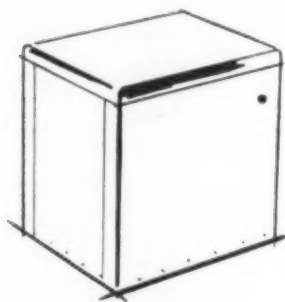
54,500 to 67,000 BTU/Hr.



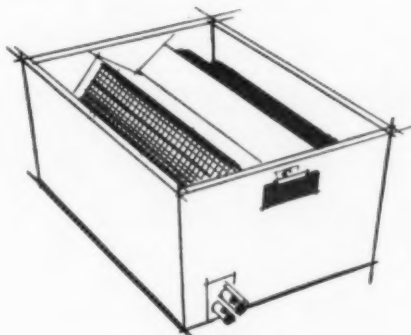
SUPER 802

74,500 to 86,000 BTU/Hr.

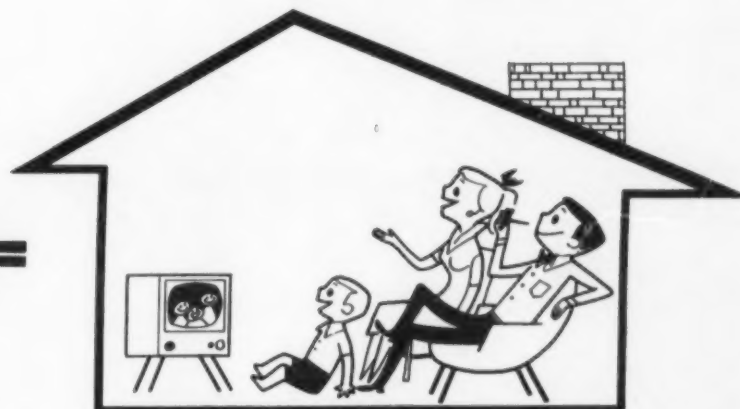
**You don't have to sell too much or too little—
with Westinghouse you profit with
"Just Right" cooling capacity!**



+



=



**AIR-COOLED
CONDENSING UNITS**

These handsome beige-and-charcoal cabinets house all moving parts—compressor and fan—outside the home. Exhaust air *up and away* from the house for *Whisper quiet* cooling, no shrubbery burn. One of these 7 basic units combines with the one best...

COOLING COIL

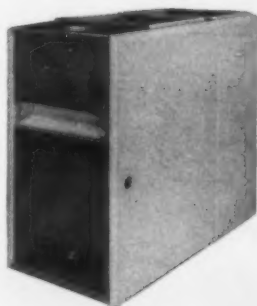
Vertical, horizontal or blower coil unit—available in a complete range of air handling capacities. To give each of your customers...

COMPLETE HOME COOLING

Maximum comfort throughout the house—24 hours a day during hottest summer weather. Masters both heat and humidity as only "Just Right" air conditioning can.

...AND AN ALL-NEW GAS AND OIL-FIRED FURNACE LINE!

These new Westinghouse furnaces are finished in two-tone color to blend with the cooling units. Gas or oil-fired for easy installation in basement, utility room, crawl space or attic... you'll find they meet the specific heating needs of your customers—wherever you sell.



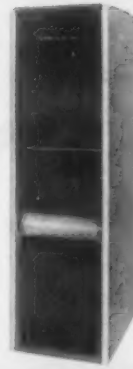
**NEW BASEMENT
UNITS**

Gas or oil-fired... ideal for basement installations where overhead clearance is limited. Heating Capacity—BTU/Hr. Gas-Fired (Input) 85,000-200,000 Oil-Fired (Output) 85,000-134,000



**NEW UTILITY
UNITS**

Gas or oil-fired... they are "File-Cabinet-Size." Approved for zero clearance installations in closets or utility rooms. Heating Capacity—BTU/Hr. Gas-Fired (Input) 85,000-150,000 Oil-Fired (Output) 85,000-123,000



**NEW COUNTER-
FLOW UNITS**

Oil-fired... specifically designed for perimeter type residential heating systems. Heating Capacity—BTU/Hr. Gas-Fired (Input) 85,000-125,000 Oil-Fired (Output) 85,000-123,000



**NEW HORIZONTAL
UNITS**

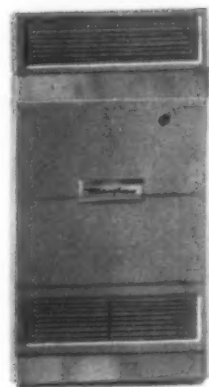
Gas-fired... need no floor space. Mount in attics, crawl spaces, closets or suspended from ceilings. Heating Capacity—BTU/Hr. Gas-Fired (Input) 80,000-140,000





**FOR COMMERCIAL
SALES!**

YOU GET ALL THE



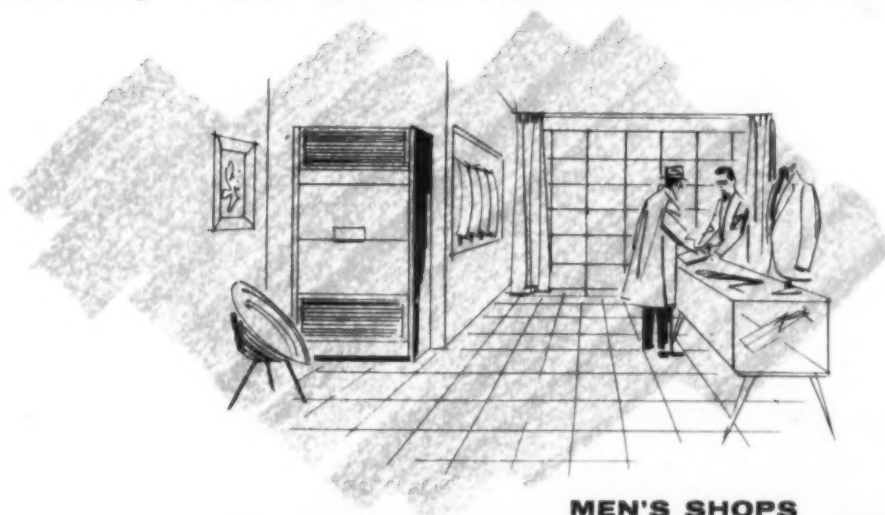
Excitement of Color

Plus the Industry's Quietest Air Conditioner... Air or Water-cooled

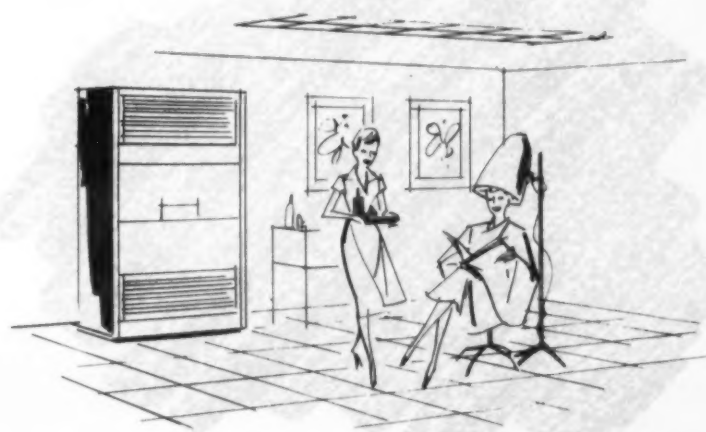
Now, you can have the right color combination for every customer . . . 15 combinations of two-tone color and harmonizing trim to blend with the interior decor of any store or office. Smartly styled in smoothly

flowing lines, the new Style-Master units can be easily installed in a minimum of space — with or without ducts. They deliver maximum cool comfort quietly and automatically — with style and beauty.

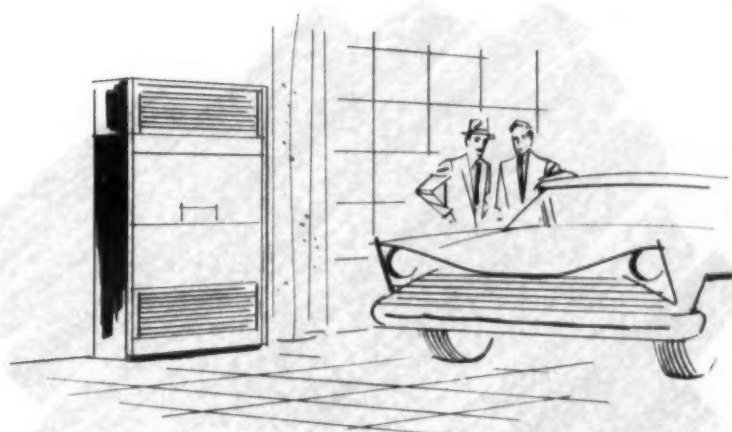
NOW, YOU CAN MATCH THE DECOR OF...



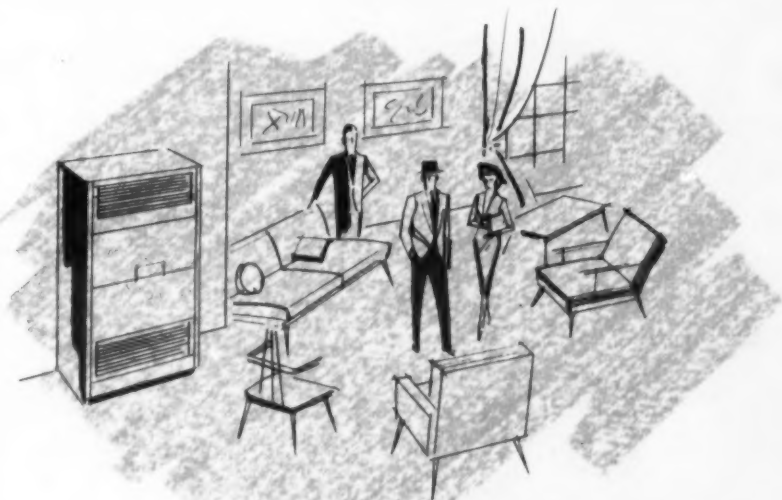
MEN'S SHOPS



BEAUTY PARLORS

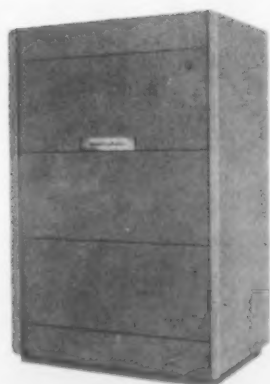


AUTOMOBILE SHOWROOMS



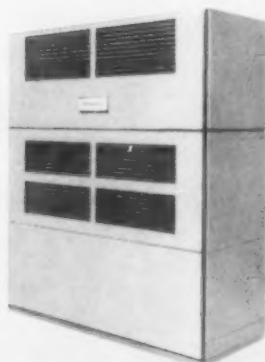
FURNITURE STORES

— AND MORE...



FLEX-MASTER

Includes all the big cooling features of the Style-Master . . . comes in two-tone beige and charcoal color combination.



CUSTOM-MASTER

For extra large cooling requirements in store, office or factory.

EVERYTHING
YOU NEED...

For the Most Profitable Air Conditioning Season Ever!

WESTINGHOUSE GIVES YOU:

- 1. Fast Delivery** — direct-from-factory or from distributor nearest you.
You get the unit you want, where you want it — when you want it.
- 2. Sales Training** — for you and your staff. Consumer selling literature, visual sales presentation for your use, heat-load estimating form, duct calculators—everything you need.
- 3. Technical Aid** — from factory sales engineers. They will help you solve any air conditioning problem . . . show you how to get maximum efficiency with minimum effort.
- 4. Finance Plans** — to fit your sales and business needs.
- 5. Advertising** — where it counts most — in your own local selling area.
Westinghouse backs you with powerful regional advertising, plus—a liberal co-op ad program.
- 6. Sales Promotion** — that builds your name and business.
Westinghouse brings you the plan and materials for your own dynamic promotion program.
- 7. Profits** — with the only “Really-New” family in the air conditioning industry
— for every residential and commercial prospect.

For further information on the 1957
Westinghouse line, write:

Westinghouse Air Conditioning Div.
Dept. 1 E 20
P. O. Box 510
Staunton, Virginia

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Tune in TV's top dramatic show. . . Westinghouse Studio One.

YOU CAN BE SURE...IF IT'S

Westinghouse

AIR CONDITIONING DIVISION STAUNTON, VIRGINIA

OFF THE CHEST

(Concluded from Page 22)

You really do not do justice to Howard Dennedy in your article as he was the real father, midwife, and wet nurse of the Servel machine. He was in no way to blame for its later failure. Those were the golden days of promotion and consolidation and, as you say, Servel was the darling of the public utilities. Why, is another story. E. T. Williams was retained as a consultant first by the group interested in taking Servel over and of course was retained by Servel, Inc. when they did take over.

To Servel goes the credit for getting the refrigeration burners off the ground. It cost investors a hat full of money but it was worth it. National advertising by Servel, followed by the others in self defense, really sold the public on the idea. Again the market was away ahead of production. Management demanded more and more production speed. Design changes were made over the protests of engineers and production people. Dennedy quit in protest and went on to other fields as outlined in your article. But never forget that he gave them a good basic product and could have kept them ahead of the field if he had been allowed to do so.

It was a pleasure putting my thoughts on paper. In case there are a few old timers who remember the articles you used to publish in your paper 30 years ago under C. B. Ryan's and my name, you can tell them that I am still on the job trying to teach this generation to make tight joints and keep things dry and clean. This is again becoming important as more and more components are being changed in the field.

J. F. HENDRICKSON

Answer: No, Kelvinator hasn't burned our ears—probably because responsible officials there confirmed the fact that Kelvinator bought up forerunners Nizer and Isko. Also, you could be giving Howard Dennedy (whom the editor knew well) too much credit. He himself claimed little credit for design pioneering. He let others take the credit—he took the money. Real good to hear from you, sir. And congratulations on (1) outliving your generation, and (2) sticking with a highly important job.

G. F. T.

SALINA, NOT TOPEKA, IS HOME OF GAGE FIRM

Gage Plumbing & Heating Co., Inc.
Salina, Kan.

Editor:

We enjoyed reading the write-up of our firm in your April 22 edition and appreciate greatly the space you have given us.

However, our firm and operations are located in Salina, Kan. instead of Topeka. I am sure that our Topeka friends will be glad to know that we are not moving in on them.

B. B. GAGE

'INFLATION' EDITORIAL ELICITS KUDOS

Republic Electric Co.

Davenport, Iowa

Editor:

I wish to commend you for your editorial in the April 1 issue of AIR CONDITIONING & REFRIGERATION NEWS, this editorial being entitled "The ABC's of Inflation."

This is sound reasoning and good for businessmen to absorb.

Your whole issue of April 1 was very good. I was impressed by the Brunner 2-page ad, by the Worthington ad, by the Perfection Industries ad, and by the Dunham-Bush ad.

Every executive is interested in ads that are well designed and touch his periphery at some point or another.

J. S. KIMMEL, SR.

PLOSAC ENTITLES ALTER TO AN OSCAR

Lehigh Air Conditioning Co.
Allentown, Pa.

Editor:

Harry Alter's editorial not only entitles him to an Oscar but his Plosac is the definite answer to most of our problems.

We here in a smaller way have been endeavoring to add 11% to our markup with a 10% reduction for pre-season installation during December and

January; declining percentage-wise to 5% for April installations, but that is not enough to jolt prospects into action.

As Editor of AC&RN you will do the industry and the public an invaluable service by pounding, and pounding, and pounding Mr. Alter's suggestion until the manufacturers and everyone down the line accept Plosac. Nine of the local air condi-

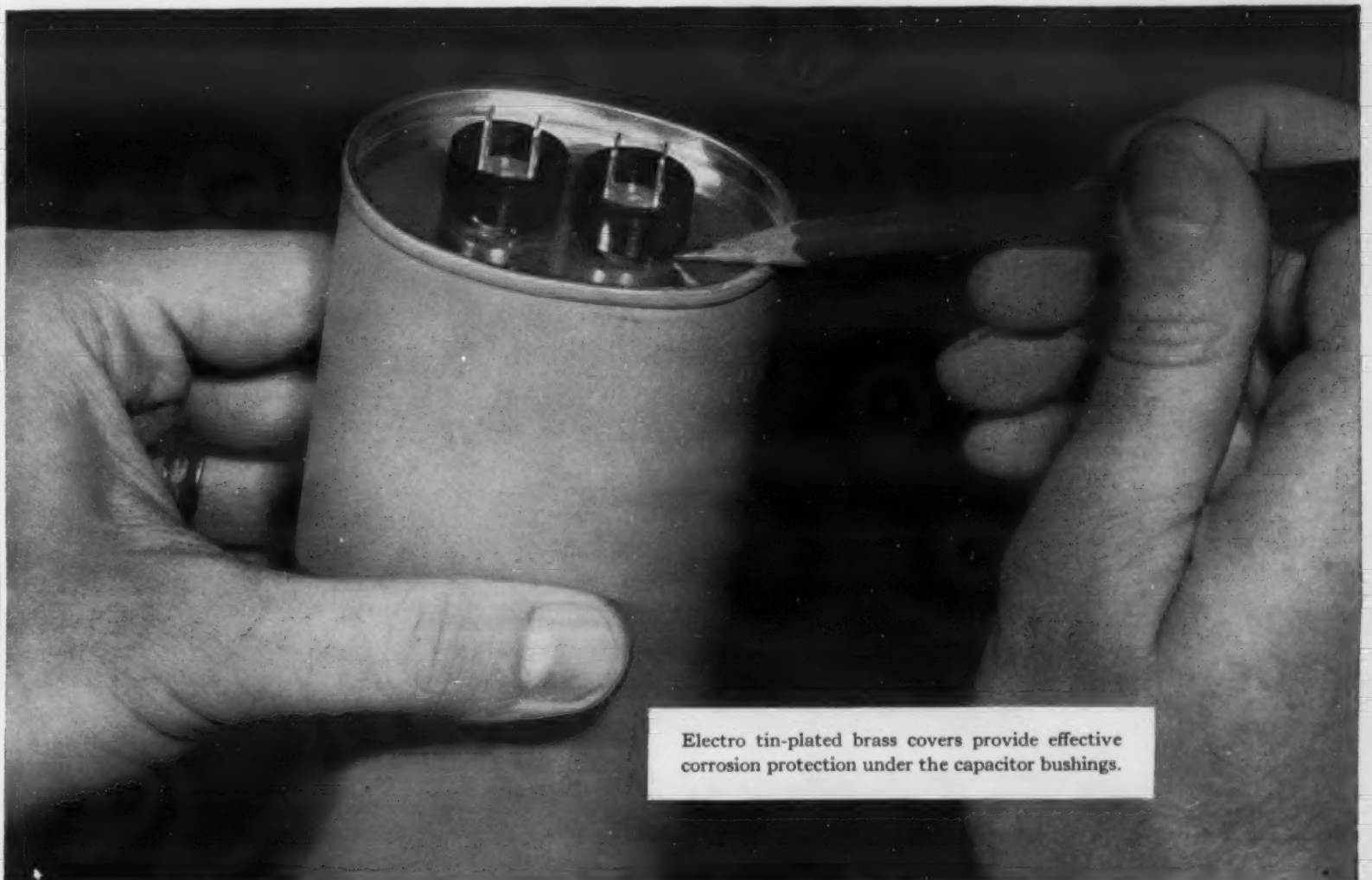
tioning and refrigeration contractors and dealers have recently formed the Air Conditioning Contractors Association of the Lehigh Valley and have affiliated with RACCA and it's the writer's hope to ask every member to push Plosac at our next monthly meeting.

Many thanks for Mr. Alter's splendid guest editorial and with a prayer for its acceptance, we are

F. J. HARDER

WHO ELSE BUT KRAMER WOULD HAVE THE ANSWER TO THE 30° TO 32° PROBLEMS!

See **KRAMER** advertisement, center spread, in next week's NEWS!



Electro tin-plated brass covers provide effective corrosion protection under the capacitor bushings.

New covers give General Electric Capacitors

EXTRA PROTECTION AGAINST CORROSION

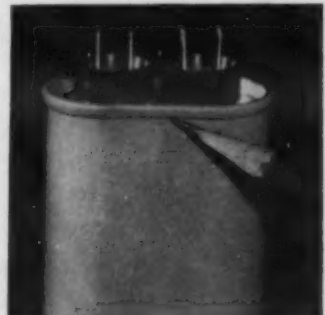
Now electro tin-plated brass covers are available on General Electric's complete line of capacitors for air conditioning units. Combined with Granite-Gray case paint, these new covers give G-E capacitors more than four times the corrosion resistance of the previously used finish.

NEW CORROSION-RESISTANT COVERS provide maximum protection for normally inaccessible areas: under the bushings and at the double roll seam. The electro tin-plated brass covers seal off these "trouble spots" from the harmful effects of corrosive atmospheres.

GRANITE-GRAY PAINT, used on the case of the capacitor, has been life tested in a 20 percent salt fog atmosphere for 1000 hours at 95 degrees Fahrenheit. Test results showed absolutely no indications of corrosion. This durable paint gives longer life

for your General Electric capacitors, even under the most adverse climatic conditions.

THE NEW COVER AND CASE PAINT are listed by the Underwriters' Laboratories and are available on all G-E capacitors for air conditioners. For more information about these protective features, contact your nearest General Electric Apparatus Sales Office. Or write for bulletin GEA-5895, "Capacitors for Air Conditioning Equipment." General Electric Co., Section 448-2, Schenectady, N. Y.



Durable Granite-Gray paint effectively resists corrosion on the capacitor case and at the double roll seam.

Progress Is Our Most Important Product

GENERAL  ELECTRIC

For more information about products advertised on this page use Information Center, page 32.

Calculation of Cooling Loads

Stoffer Explains Fundamentals To Figure Commercial, Residential Loads To Fit Job Closely; Outlines 24-Hour Home Load Calculation

COLUMBIA, Mo. — Calculation of cooling loads for air conditioning systems today is generally done with carefully developed and abbreviated forms, but it is still a good idea to know some of the fundamentals involved, so that the load calculation will fit the job as correctly as possible, resulting in the best system being installed.

This was brought in a talk "Calculation of Cooling Loads," by G. H. Stoffer, of Carrier Corp., in a presentation given at the University of Missouri Air Conditioning Conference here recently.

The discussion brought out the differences between calculating cooling loads for commercial and residential applications, and outlined the thinking be-

hind the "24-Hour Load Calculation Method" for residential systems.

"Generally speaking, when we are calculating a cooling load, it means that we have an excess of heat present and we are interested in moving some of it to some other location," said the speaker. "Therefore, our problem is to determine the correct amount of heat to move."

"First, let us assume that we are interested in cooling a small office. The variables affecting cooling load calculations are numerous, often difficult to define precisely, and always intricately inter-related."

"Most of the components of the cooling load vary in magnitude during a 24-hour period and the changes in cycles are

not usually in phase with each other. The accuracy of a cooling estimate—to a very large degree—is dependent upon a complete and accurate on-the-job survey.

General Inside Condition

"Generally, in cooling for comfort applications there is an accepted inside condition which falls within the comfort range of the psychrometric chart."

"The outside condition is dependent on the outside elements. The solar heat gain is of great magnitude and the orientation of the building is an important consideration, including the areas of roof, walls, and glass."

"Next, there is the transmission effect or the heat conducted through building materials

because of difference in temperature between the outside and the room air.

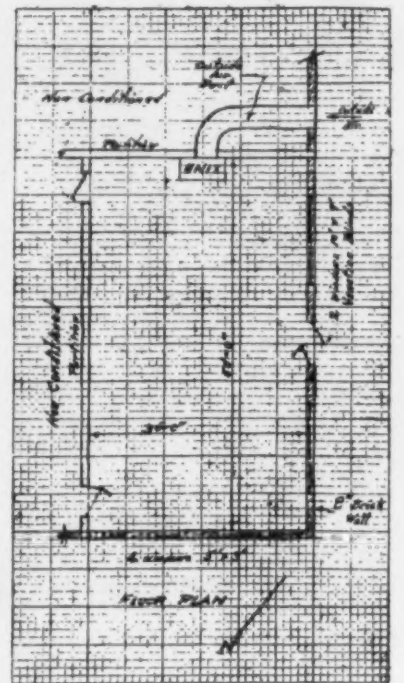
"The internal load is composed of any heat produced within the conditioned area; including people, lights, miscellaneous equipment, etc."

"All of the heat in the outside air used for ventilation, and the infiltration air has to be included in the load."

"With an accurate survey and the use of authentic factors for temperature differences and the coefficient of heat transfer, we can arrive at a cooling load."

"Before a final equipment selection is made, a careful analysis should be made of the load calculation, or the B.t.u. figures. Normally the economics of the situation will not permit the extravagance of design to meet a demand that occurs only a few times during the year."

"For example, your estimate may have been based on a 100° outside temperature. The weather



RECOMMENDED for those making load calculations is the use of a sketch pad of graph paper. Each 1/2-in. block can represent so many feet. Sketch should show dimensions of space, compass directions, windows and doors, partitions and columns, temperature condition of surrounding rooms, and location of electric and water service. It can also be used to indicate location of proposed air conditioning system elements.

er records might indicate that 100° is exceeded only 15 days during the summer. It might be perfectly possible to design the equipment on a conservative basis and let the inside temperature go up during the outside peaks.

"The maximum people load might occur for only short duration."

"The maximum people load might occur at night when there is no solar heat gain."

"It might be good economy to insulate the roof or the floor, weatherstrip the windows, install awnings and revolving doors."

Residential Calculations Different from Others

"Residential air conditioning is different from any other air conditioning application, and standards used for commercial jobs are not readily adaptable to the characteristics of residential cooling," Stoffer pointed out.

"In commercial cooling loads the major heat gain is largely internal."

"The major heat gain in residences is largely external. Internal occupancy and lighting wattage per square foot is less than any other application, while in general the ratio of roof and outside area to floor area is much greater."

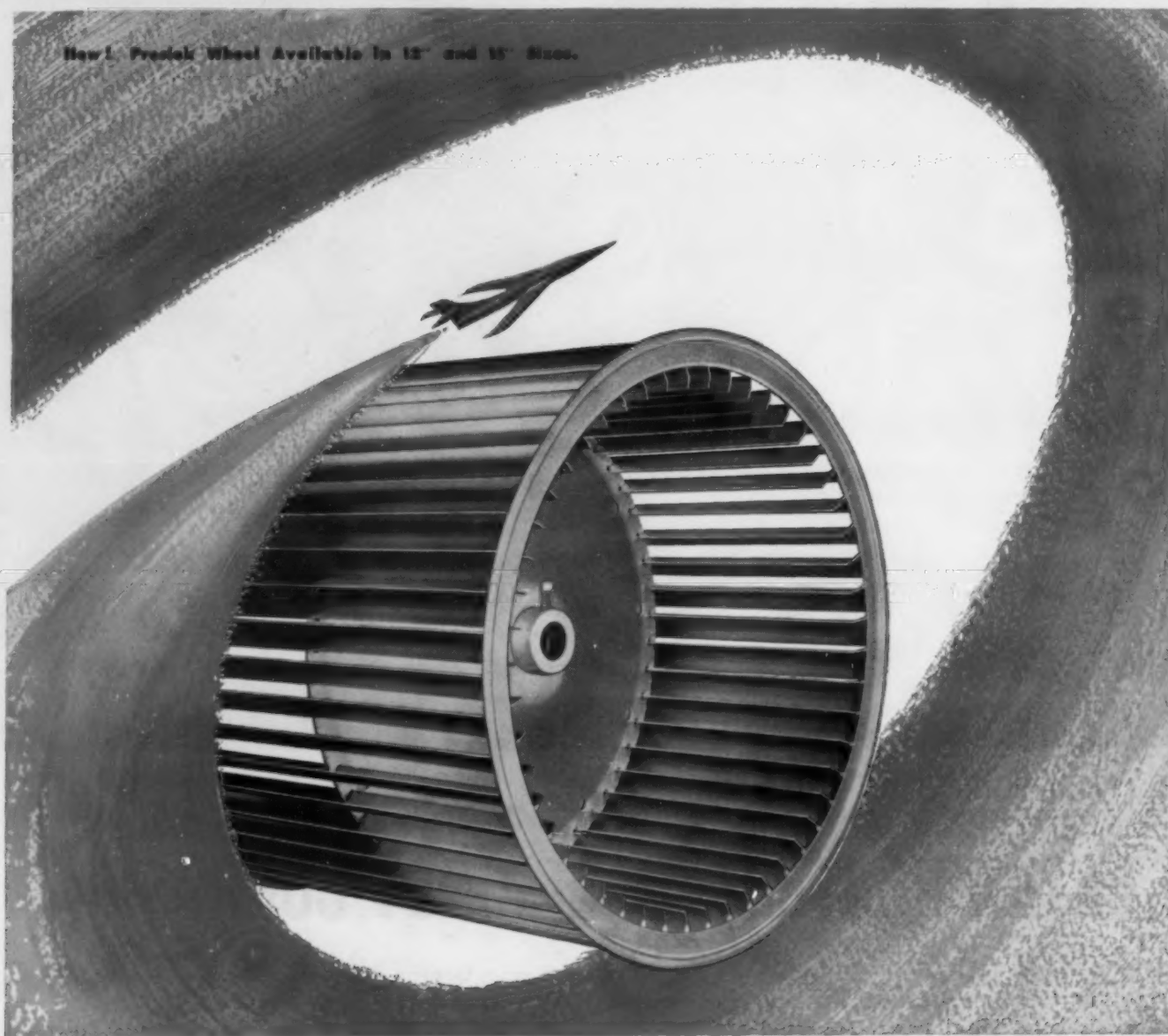
"On early residential jobs, engineers were soon aware that installations with two compressors, resulted in one compressor carrying the load practically by itself. The second compressor was very rarely needed."

"Installations with single compressors were found to be off as much as one third to one half of the time—even in maximum design weather."

"The design of the early cooling systems, in general, followed the practice used in commercial applications. It seemed like a logical approach but we came up with the wrong answers."

"Some designers went so far as to calculate a residence on a commercial basis and install one half of the estimated com-

(Concluded on next page)



GIVE YOURSELF A SPEED 'MARGIN OF SAFETY'

Specify Preslok® Wheel... Guarantees 50% More Operating Speed



Are your modern air conditioning requirements calling for greater speeds, higher statics? Preslok is guaranteed to increase your operating speed maximums by at least 50%!

With Preslok, the center disc grips the blade mechanically by an exclusive Lau locking method. Four disc fingers slip into the blade aperture and are pressed together in locking position. Preslok eliminates ballooning at higher speeds... insures a quiet operation.

One more advance for Lau engineering. One more answer to the needs of original equipment manufac-

turers, made possible by superior Lau engineering and production skills.

The Lau engineering skills are available to the entire air-moving industry... and specifically to your business whenever you need them.

Perhaps your organization is confronted with a difficult air-moving problem right now. If so, why don't you call in Lau, who have pioneered so many advances in more than 25 years of service. Write Dept. M, today.

THE LAU BLOWER COMPANY

2007 Home Avenue, Dayton 7, Ohio

Azusa, California. In Canada: The Lau Blower Company of Canada, Ltd., Kitchener, Ontario

World's Largest Manufacturer of Air-Conditioning Blowers

Calculating Cooling Loads--

(Concluded from preceding page) pressor capacity. This procedure was based purely on judgment and experience and was without sound engineering.

"Basically the compressor would not operate continuously because the temperature of the air in the house would be too low. The heat flowing on and into the external surfaces of the structure was not entering immediately into the interior, to heat the air inside the house.

"Therefore, our calculated 'instantaneous' cooling load was much greater than the cooling load sensed by the air conditioning system.

"One logical reason for this discrepancy in heat quantity is due to the fact that the structural materials and contents of a residence, taken together, represent a considerable mass of material. The exact quantity is difficult to estimate and varies with different types of construction, but an approximate figure for an average size house would be 50,000 lbs.

"A mass of material of this magnitude is capable of storing a considerable amount of heat.

"An average residential cooling load is made up of transmission and solar heat gains comprising perhaps 75% of the total load. Moisture and infiltration represents 20% and the additional 5% comes from miscellaneous internal heat sources.

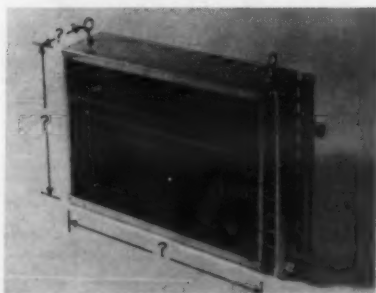
Transmission, Solar Heat Gain Important

"On this basis it is important for us to concentrate on the transmission and solar heat gain.

"The solar heat gain through glass is instantaneous, while the solar transmission through building material is much more complicated. Reasonably accurate solutions can be obtained through analysis and the use of hydraulic and electrical analogs. Naturally this method was not practical enough for the average designer of a residential job, but it does serve as a check on other methods.

"Here is where we developed

**If these dimensions
are your problem
COOLENHEAT
has the Coil to fit**



EVAPORATORS
CONDENSERS
WATER—STEAM AND
NON-FREEZE STEAM
IN ANY SIZE OR CAPACITY

BEFORE YOU RESCHEDULE
YOUR PRODUCTION
DUE TO LATE SHIPMENTS,
CHECK OUR FAST DELIVERIES

COOLENHEAT, INC.
33 MAIN ST.
WOODBIDGE, NEW JERSEY

our new concept which we call the '24-Hour Load Calculation Method.' We selected several homes to conduct our experiments with the idea of determining the thermal capacity of structural materials.

"The tests were run when the solar effects were at their maximum but when the outside temperatures were not extremely high. Consequently, the homes were closed up but remained normally occupied. No heating or cooling was applied.

"The homes were equipped with thermocouples located to record room air temperatures as well as the surface temperatures of the floors, walls, ceilings, etc. All temperature conditions outside the house were recorded as well as the sun.

"The outside temperatures went through a range of 25 to

30°, with a maximum around 2 to 3 p.m. and the minimum occurred around 5 to 6 a.m.

"The tests showed that the mass of the structures and the contents of the houses were capable of dampening the variation of the inside temperature to no more than 6°. Variation of inside temperature also was very gradual. Low point occurred about 5 or 6 a.m.

"The high point inside was reached several hours after the outside temperatures reached its high point, anywhere from 6 to 10 p.m. The heavier the structure the later the peak.

"It was reasoned that under maximum summer conditions requiring cooling, a residence that is continuously refrigerated by equipment of sufficient size to remove the computed 24-hour heat gain, will display inside temperature variations the same as the uncooled and unheated houses subjected to test.

Furthermore, the size of equipment so selected will be the smallest and least expensive that may be safely applied.

In the 24-hour load calculation method, the factors for solar gain and heat transmission through glass, the speaker said, are calculated by summing the hourly values of total heat gain over 24 hours (including the negative values for

night time) and dividing by 24. Total heat gain figures include direct solar radiation, diffuse solar radiation, and transmission effect.

The factors for heat gain through walls and roofs are calculated by using the temperature difference between the 24-hour "sol-air" temperature and an average inside temperature of 75°.

DEFROST WARMUPS IN COOLERS ENDED!

at no extra cost with new system for Fresh Foods!

See **KRAMER** advertisement, center spread, in next week's NEWS!

Tecumseh

engineering VISION

ADDS ANOTHER MODEL

TO THE FAMOUS Pancake LINE

THE AR43



Model AR43
1/4 HP — High Speed

Tecumseh ENGINEERING VISION is once again responsible for the further expansion and improvement of the popular pancake line. The new AR43 is a 1/4 HP high speed compressor designed with a single reciprocating piston. Major result of this design change is a reduction in compressor noise level. In addition to cost savings, the new design provides another quiet, long lasting compressor with all of the outstanding features expected from Tecumseh.

This improvement has been accomplished without sacrificing the space-saving pancake shell, common to all compressors of this type. Therefore there is no change in the physical appearance or overall dimensions of the new model and customers may incorporate the AR43 into their line with no change in basic tooling.

This is another example of Tecumseh ENGINEERING VISION working to design better, more useful products for our customers.

Call your Tecumseh representative today and learn how you can profit with Tecumseh Pancakes.

Now There Are 8

Pancakes

One 1/12 HP model —
One 1/9 HP model —
Two 1/6 HP models —
Two 1/5 HP models —
Two 1/4 HP models —

For Household Refrigerator,
Freezer, Vending Machine,
and Water Cooler applications.



The Leader Serving Leaders in the Air Conditioning and Refrigeration Industries

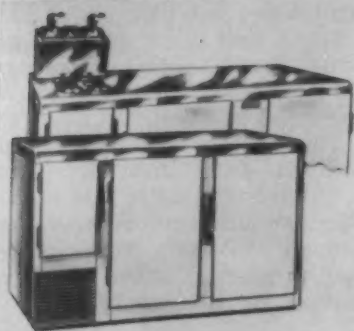
TECUMSEH PRODUCTS COMPANY

MARION, OHIO

TECUMSEH, MICHIGAN

EXPORT DEPT: P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

What's New



Ice Cream Mix, Bulk Cooler Line Out

—KEY NO. G-530—
PUNXSUTAWNEY, Pa. — A new line of "Beverage-Air" ice cream mix and bulk coolers has been announced here by Punxsutawney Co.

Designed for needs of dairy stores, fountainettes, and ice cream bars for more storage combined with sanitary counter space, the new coolers are available in plain or fountainette models.

Heavy-duty, reinforced, stainless steel tops permit installation of counter-type soft ice cream or milk shake machines, it was noted. Fountainette units are available in a wide variety of pump and fruit jar arrangements that can be faced either way on cabinet tops so doors for placing or removing mix can be concealed from customer's view.

Interiors are said to provide more storage in the same floor area. They hold 5 and 10-gal. cans without wasting space. Separate refrigerated utility compartment is for storing containers of fruits, syrups, and bottled milk.

Fiberglas 'U-Trim-It' Filter Introduced

—KEY NO. G-531—
TOLEDO—A new Fiberglas "U-Trim-It" filter was recently introduced here by Owens-Corning Fiberglas Corp.

Claimed to be easily fitted by using the old filter as a pattern, trimming off excess, and slipping



into place in any room air conditioner, the fine glass fibers of the unit are produced at a density which provides stability without use of frame or grille.

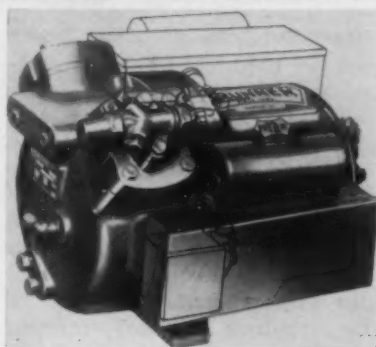
Condensing Units Have Optional Control Mounting

—KEY NO. G-532—

UTICA, N. Y.—Location of the control panel either on the side or on the top of Brunner's semi-hermetic refrigeration condensing unit in 1/4, 1/2, 3/4, and 1-hp. models has been announced by the Brunner Mfg. Co.

Optional side or top control panel mounting provides designers of bulk milk coolers with top access to the controls and unusual flexibility in design according to the manufacturer. In addition, designers of other refrigeration equipment including meat and dairy cases, beverage coolers, bar fixtures, and reach-ins, need no longer be plagued by inaccessible control panels. Mounting on side is the standard position, the company said.

Brunner fractional horsepower units are air cooled, water cooled, or combination air-and-water. Compressors have positive splash lubrication. Units are spring mounted to reduce compressor



vibrations and crankshaft is dynamically and statically balanced for smooth operation. Light weight aluminum alloy connection rods reduce noise. Motor is cooled by suction gas for cool and efficient long life operation. Compressor heads are set at an angle for low over-all height and ease of loosening head bolts, it was noted. Bolted construction of condensing units permits easy take-down for servicing.

Airtemp Adds Centrifugal Water Chiller Units

—KEY NO. G-533—

DAYTON—Airtemp Div., Chrysler Corp., has released information on the new line of Airtemp centrifugal water chiller units.

Airtemp's initial centrifugal water chiller series will include six models in 150, 200, 250, 300, 400, and 500-hp. capacity. Operating at 3,600 r.p.m. they will feature: completely automatic control, accessible hermetic construction of compressor and motor assembly, sealed two-stage centrifugal compressor, balanced thrust in compressor and motor assembly, and pushbutton starting and stop-

ping with capacity automatically adjusted to load variations, it was explained.

Other features listed were compact design (components include compressor, shell-and-tube type evaporator, shell-and-tube type condenser, and automatic controls); quiet operation and freedom from vibration; no field alignment of rotating parts; forced feed lubrication; and operating range from 100% to as low as 10% of rated capacity.

Airtemp Construction Div. of the Chrysler Corp. will handle the national distribution.

Havens

COMPLETE LINE OF PERFORMANCE PROVED COOLING TOWERS FOR EVERY TYPE INSTALLATION

HOT DIPPED GALVANIZED After Fabrication



MODEL 33-7.5

RESIDENTIAL and SMALL COMMERCIAL INSTALLATIONS 3-15 TON

Small and compact, this tower has pan cover, expanded metal inlet screen and expanded metal fan screen. The motor and fan are recessed and hot water enters rear of distribution pan. Slow speed fans insure quiet operation. Easily disassembled if necessary.



MODEL 33-40

LARGE COMMERCIAL AND INDUSTRIAL INSTALLATIONS 20-60 TON

Constructed for easy disassembly, this tower has as standard features a fan screen, belt guard and weather-protected motors. Accessory items at a slight extra cost include a pan cover, expanded metal inlet screen and motor cover.



80-150 TON

HEAVY DUTY INDUSTRIAL INSTALLATION HAVENS VERTI FLOW 80-150 TON

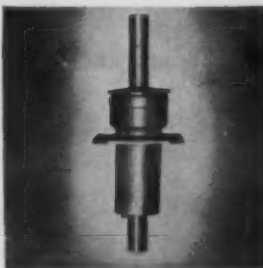
As modern as today's architecture, the low, sleek lines of the Havens Verti Flow Towers blend with building outlines. Fans are all aluminum—variable pitch—and sheaves are corrosion resistant cast iron. Shipped assembled. Also available—175 and 200 ton Verti Flow models—shipped in 3 sections.

OUTSTANDING PERFORMANCE MINIMUM MAINTENANCE WITH HAVENS LONG LIFE BEARING DESIGNS



33 SERIES BEARING

Porous bronze bearings in zinc-plated cast iron housing. Stainless steel fan shaft. Extra large oil cup.



VERTI FLOW BEARING

Bearing assembly is supported by heavy structural members. All parts are corrosion resistant.

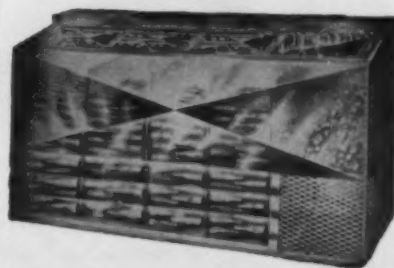
Write for FREE brochures on Havens Series 33 Cooling Towers and Havens Verti Flow Cooling Towers

Havens COOLING TOWERS

Division of

HAVENS STRUCTURAL STEEL COMPANY
1713 CRYSTAL AVENUE • KANSAS CITY 26, MO.

"A CASE OF COOL JUDGMENT"



FLO-COLD DRINKMASTER STAINLESS STEEL CUBER—COOLER.

SOLD THRU DEALERS ONLY

WRITE

United Refrigerator Engrs.
MENOMINEE, MICH.

AVAILABLE IN SIZES 4 to 10 FT.

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For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

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DETROIT 26, MICHIGAN

Develops 10, 15-Hp. Air-Cooled Packaged Units

—KEY NO. G-534—

SYRACUSE, N. Y.—A broadening of its line of air-cooled "Self-Contained Weathermaker" air conditioners has been announced by Carrier Corp.'s Unitary Equipment Div.

The firm has added 10 and 15-hp. packaged units requiring no water to the air-cooled models previously available in 5 and 7½-hp. sizes. Carrier also has a full line of self-contained water-cooled equipment ranging from 2 to 20 hp.

Carrier's newest air-cooled equipment features a low-friction compressor which is claimed to use less power at peak loads. The compressor and the refrigeration motor "are both lubricated for life and hermetically sealed in a rugged casing to keep out dust, dirt, and moisture," it was pointed out. "Yet both are readily accessible for servicing."

"The fan is especially designed to move large masses of air at low velocities insuring quiet operation. It has ample capacity to force air through duct systems and may be employed at a wide range of speeds with no efficiency loss."

"The cooling coil of the new Weathermakers is set at a steep angle to expose the maximum surface to the air stream and to insure longer contact of the air and cooling coil. Large filters insure

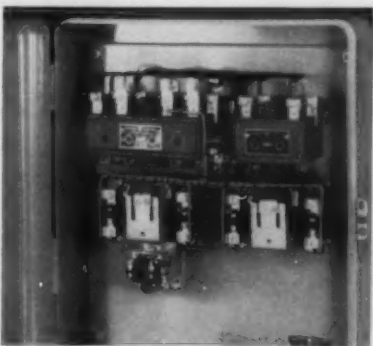
extended periods of operation with minimum maintenance."

The units have been designed for central or direct air conditioning of stores, business offices, shops, or small industrial buildings. When installed in the space itself, the Weathermaker models discharge air into the room at near-ceiling levels.

When used as a central system, the equipment may be located in a storeroom, attic, or basement, and the cool, filtered, dehumidified air is distributed through a duct system. If a forced warm air system is used for heating, the existing duct system may also be used.

The addition of a heating coil turns these units into year-round air conditioning systems.

The Weathermaker's air-cooled condenser is housed in a metal casing and consists of a slow-speed centrifugal fan and spiral fin coils. The casing of the new self-contained air-cooled units is made of cold rolled steel, Bonderized and coated inside and out with rust-resistant primer.



Thermostatic Switch Has Weather Shield

—KEY NO. G-536—

SCHENECTADY, N. Y.—A new thermostatic switch with Fiberglass sun and rain shield provides inexpensive, automatic means of connecting small residential capacitors to handle heavy air conditioning loads.

Supplied by General Electric Corp.'s Capacitor Dept., the device will switch capacitors on at approximately 85° F. ambient and off at approximately 75° ambient.

Armstrong Air Conditioning

and "Coolerama"!!!

"Say J.P., what made you decide to handle Armstrong air conditioning equipment?"



"Well Sam, I'll tell ya. There's two big reasons — first of all Armstrong makes a full line of air conditioners — up-flow, down-flow, horizontal-flow, matchin' companion units. And they make the all new, compact FRIGIPAK . . . the best, most versatile air conditioner ever made!"

"The second reason is the one that really convinced me though. Armstrong provides dealers with the best sellin' equipment in the industry."

"Big campaigns by Armstrong are designed specifically for me. They solve all my sellin' problems. Take right now . . . Armstrong's big 'Coolerama' air conditioning promotion's really bringin' in the business. I've been sellin' air conditioners by the carload. Fact is, this'll probably be my biggest year."

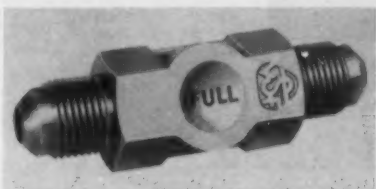
"Gee J.P., that sounds great. What's a fella do to become an Armstrong dealer?"

"Just call your nearby Armstrong wholesaler, Sam. He's got all the details."



ARMSTRONG FURNACE COMPANY

DEPT. AC, COLUMBUS 8, OHIO • DIVISION OF NATIONAL UNION ELECTRIC CORPORATION



Offers 1-Piece Double Port Sight Glass

—KEY NO. G-535—

PITTSBURGH—Superior Valve & Fittings Co. here has developed a new product designed to solve a "leak" problem in many sight glasses and liquid indicators used in the refrigeration industry.

Called "The Hermetic Eye," the new product has been thoroughly tested and now is ready for the market. Its design eliminates the usual gaskets, moving parts, and extraneous fittings. It is a one-piece, compact device which Superior says is "Engineered and manufactured to specifications that go far beyond the requirements for standard sight glasses and liquid indicators."

The double port sight glass is made from a one-piece forging. There are no joints, no soldered parts, no springs, no gaskets, no fittings. Into the two ports is fused a heat-resistant, high tensile strength glass. The seal is hermetic; the bond is permanent.

The Hermetic Eye is only slightly larger than the tubing in which it is placed. By looking into the glass port opposite the word "Full," the serviceman can tell at a glance if the refrigeration system is fully charged with liquid or not. The word "Full" is clearly visible only if the line is completely full of refrigerant.

The one-piece body design includes wrench flats and prevents torque damage. Since the glass windows are flush with the body surface, they are easily cleaned. The absence of gaskets or joints avoids the possibility of leaks and the glass ports are large enough to give a good view of the refrigerant.

The company's method of hermetically fusing the glass to brass body gives the Hermetic Eye a positive seal regardless of temperature, pressure, or vibration, it is claimed. The new product has been tested at pressures of more than 3,000 p.s.i., although most refrigeration systems are subjected to maximum pressures of 400 lbs.

WHY PAY MORE

FOR CONDENSER CLEANER WHEN THE BEST COSTS 30% LESS?

ANCO CONDENSER CLEANER is second to none for effectiveness, speed and safety, yet it costs about 30% less than other leading brands. This exclusive formula is simply dissolved in the sump while the system is in operation. Within a few hours, the condenser tubes are free of scale and head pressure is down to normal. ANCO is safe for servicemen to use and absolutely harmless to equipment. So why pay more when you can't buy better? Buy ANCO CONDENSER CLEANER and make more profit on every cleaning job.

FREE!

WATER TREATMENT MANUAL

A complete booklet on the control of scale, rust and algae in refrigeration and air conditioning systems. No service department should be without a copy. It's yours for the asking.



COMPARE THE COST
This 12-pound carton costs less than the 10-pound carton of other leading brands.

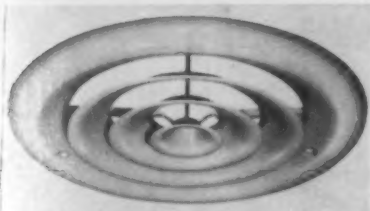
Sold by wholesalers of air conditioning and refrigeration supplies

SPECIALISTS IN MAKING
WATER BEHAVE



Anderson Chemical Company, INC.

Box 1424 • MACON, GEORGIA • Phone 5-0466



Ceiling Diffuser Has Anti-Smudge Ring

—KEY NO. G-537—
COOPERSVILLE, Mich.—A new, wide ring ceiling diffuser, with massive, flowing lines, has been introduced by Air Control Products, Inc.

Designated manufacturer's model 76 on the flush style, and model 77 in the step-down version, the new diffuser consists of a series of wide, concentric rings in a new air-foil design. The anti-smudge outer ring is designed to eliminate virtually all turbulence-caused smudging, the company said.

Big capacity of the new diffusers eliminates any special adapter fittings. Both models 76

and 77 are supplied in satin beige prime coat, and are equipped with self-sealing gasket applied at the most efficient point—where the diffuser meets the duct.

A new "push-pull" rod-operated damper with the popular butterfly valve has been designed for use with the new ceiling diffusers. The flush and step-down diffusers and dampers are available in 6, 8, 10, 12, and 14-in. sizes.

Fisher Introduces Leak Detector

—KEY NO. G-538—
PALO ALTO, Calif.—Detection of hidden leaks in oil and water pipes is claimed to be made easier with a new transistorized "M-Scope" leak detector produced here by Fisher Research Laboratory, Inc.

Use of five miniature hermetically sealed transistors makes it possible to provide several times more sound amplifications, the company declared. Weight of the unit is 7 lbs.

A built-in battery test circuit



is included for easy maintenance, it was noted. Controls and operation have been simplified. Size of the detector is 9 by 9 by 5 in.



Offers Home Milk Dispenser Can

—KEY NO. G-539—
CONSHOHOCKEN, Pa.—A new stainless steel can for home milk dispensers was recently developed by Superior Metalware Div., John Wood Co.

Designed for use with the refrigerated home milk dispensers now being installed in many homes, these dispensers are said to produce upped milk sales with fewer delivery stops.

Of 3-gal. capacity, the cans are heliarc welded, resist corrosive action from moisture and cleaning compounds, the company says.

Parts are hydraulically pressed together after forming and welded in argon atmosphere.

Refrigerated Serving Buffet Added to Line

—KEY NO. G-5310—
EVANSVILLE, Ind.—Expansion of its "Wonderbar" refrigerette line to include a new refrigerated serving buffet and additional color combinations was announced recently by Servel, Inc.

Known as the "Serv-Ette," the serving buffet is a portable hospitality bar with its own built-in silent electric Wonderbar refrigerette for freezing ice cubes and for chilling beverages and foods.

The Serv-Ette is custom built of selected hardwoods with V-matched front panels.

Bottle storage space is provided at each end of the Serv-Ette. The doors of the bottle compartments

have built-in locks and glassware racks. Highball glasses are included. This hospitality bar rolls on 3½-in. rubber-tired casters. Its over-all size is 48 in. wide by 18 in. deep by 32½ in. high.

The range of color combinations in the Wonderbar refrigerette has been tripled this year to provide finishes that will fit in with modern or traditional surroundings in any room.

The Wonderbar is refrigerated by an electrically operated absorption system which freezes with no moving parts and is permanently silent. The compact cabinet holds 1.5 cu. ft. of food and beverages, and freezes 28 ice cubes.

Your Sales are the payoff

AUTOMATIC KUBER

AND LA CROSSE GIVES YOU MORE OF EVERYTHING YOUR CUSTOMERS WANT MOST IN COMMERCIAL REFRIGERATION EQUIPMENT

SELF CONTAINED BOTTLE COOLER **DIRECT DRAW** **SELF CONTAINED BLUEBIRD**

LA CROSSE

THE LINE THAT'S PROFIT DESIGNED FOR YOU

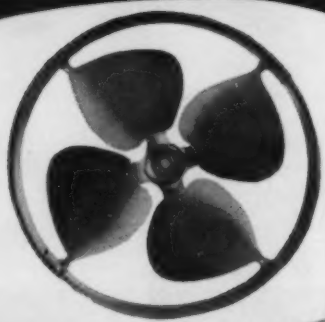
ICE CUBE MAKER 12 TRAY **PRE-COOLER**

LA CROSSE COOLER CO.

3000 LOSEY BLVD., SO.
LA CROSSE, WISCONSIN

EXPORT OFFICE:
80 BROAD ST.
NEW YORK CITY
CABLE: EXIMPORT

● CUSTOM DESIGNED
AND BUILT
● PRODUCTION PRICED



MPEL-AIR
by **BROOKSIDE**

● **WHY HAMPER YOUR DESIGNERS** by building your product around available stock fan blades, when BROOKSIDE will custom-design the blade to fit your product? . . . and at production model prices! BROOKSIDE fan blades can be produced in any diameter, any pitch, and any hub type. 3, 4, and 6-blade fans are produced daily.

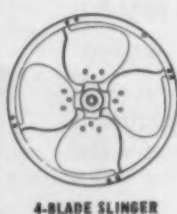
● **SLINGER RING PROPELLERS** incorporate the ring tab as a part of the blade. Rings are one piece and die drawn. Call on BROOKSIDE for the highest standard of efficiency, uniformity, and quiet operation of the air impeller built into your product.



6-BLADE SLINGER



4-BLADE STANDARD



4-BLADE SLINGER



BROOKSIDE CORPORATION
McCordsville, Indiana

Do You Need FLOOR UNITS for CHILLED WATER?

NOW—attractive water coil units for use in air conditioned space . . .

Immediate Shipments from Stock

MODELS

Complete units as pictured—for direct discharge with 4-way air distribution grilles.

Basic units, less top section, for ducts.

CAPACITIES

Three sizes—from 3 to 15 tons. Air delivery 1200 to 5600 cfm.

COILS

All copper or aluminum fins. Highest efficiency for chilled or well water.

FEATURES

Insulated cabinets. Heating with hot water or steam. Quiet operation.



Water coil and DX air handling units—Up to 24,000 cfm. Shipments from Stock on All Sizes.

Write For Bulletin AC-57-W



HASTINGS AIR CONTROL, INC.

3215 Leavenworth
Omaha 5, Nebraska

30° DESIGN TEMPERATURE 'ROUND THE CLOCK!

a new, economical system for Fresh Foods!

See **KRAMER** advertisement, center spread, in next week's NEWS!

Men on the Move . . .

Lancaster Pump & Mfg. Co., Inc.—Retirement of H. L. FRENSDORF as general sales manager after 35 years of service in the industry has been announced. He will remain semi-active with the advisory committee of the firm.

PAUL CARPENTER, field sales manager, will assume Frensdorf's duties.

Temprite Products Corp.—ROBERT W. GENTRY has been promoted to sales engineer. He has been with the firm since 1953.

Sherer-Gillett Co.—ROBERT O. SCHEIBLE will be responsible for Ohio with headquarters in Columbus in his new post as divisional sales manager of the firm.

LAWRENCE J. PAHL will be divisional sales manager of Indiana with headquarters in Indianapolis.

C. C. STINETTE, Huntington, W. Va., has been named divisional sales manager in charge of Maryland, Delaware, Virginia, North Carolina, and the District of Columbia.

Fedders-Quigan Corp.—G. E. LAPORTE, formerly chief design engineer, Room Air Conditioning Group, has been promoted to the newly-created position of assistant director of engineering.

H. G. WILLIAMS, vice president-manufacturing, has been moved from Buffalo to the main plant at Maspeth, L. I., N. Y.

R. H. MEYERHANS, director of engineering, also will move from Buffalo to the main office.

Trane Co.—Three men have been added to the self-contained air conditioner sales force.

WILLIAM C. LAUGHLIN, associated with the industry for over 20 years, has been named sales representative in Houston, Texas.

EDWARD P. OUELLETTE, with 17 years' experience, has been assigned to Boston as sales representative.

WILLIAM J. YUTZ, formerly in packaged air conditioning sales, will be sales representative in Louisville, Ky.

E. I. du Pont de Nemours & Co., Inc., "Freon" Products Div.—DOUGLAS H. MCKENNA, sales representative, has been assigned to Palo Alto, Calif. territory which includes northern California.

Sporlan Valve Co.—HEROLD S. JORDAN, formerly field sales engineer for a manufacturer's representative, recently joined the firm and will assist P. J. McCARTY, head of the Los Angeles sales office in covering southern California and Arizona.

Westinghouse Electric Corp.—EDWARD P. SUBLER has been named assistant to the manager of the Major Appliance Div., succeeding R. S. Sheetz, now manager of the company's water cooler and dehumidifier department. Subler was advertising supervisor for the dishwasher and kitchen utilities department.

JOHN H. CHILES, JR., manager of the transformer division, and B. M. BROWN, manager of the Baltimore divisions, have been elected vice presidents.

JAMES H. JEWELL, vice president-sales, has been appointed to the new post of vice president-marketing. He will assume direction of the firm's new distribution services department in addition to present duties.

Iron Fireman Mfg. Co.—LEWIS J. COX has been elected first vice president and chief executive officer, following the death of the firm's president, WAYNE F. STRONG. He has been general manager of the heating and cooling division.

Perfection Industries, Div. of Hupp Corp.—Three new district managers have been appointed in an expansion of wholesaler distribution.

C. ADRANGE MONTAGUE will serve as air conditioning specialist in the eastern Pennsylvania-New Jersey area from Philadelphia. His operations will permit T. W. RUSSELL to concentrate on large-volume dealer and builder business received by Perfection wholesalers in this market area. He has been sales manager of residential air conditioning division of York-Shipley, Inc.

THEODORE E. BRUCH will cover Iowa and South Dakota. He has been heating and air conditioning engineer and dealer con-

tact representative for A. Y. McDonald Mfg. Co.

JOHN F. PLATZ will serve the southern Ohio-western Pennsylvania area. He has been associated with H. Quiggan & Son, Cleveland, heating and air conditioning equipment wholesaler.

Hussmann Refrigeration, Inc.—Appointment of JAMES F. RADEL as Chicago factory sales branch manager has been announced. He succeeds ROBERT G. COSCO who has been promoted to upper mid-west sales division manager. Radel has been district sales manager in Chicago.

American Radiator & Standard Sanitary Corp.—COURTNEY C. BROWN, dean of the Columbia university graduate school of business, and JOHN C. LINSMEYER, executive vice president, were elected directors to replace retiring ROLAND J. HAMILTON and ALEX C. HOYT.

National-U. S. Radiator Corp.—Promotion of three executives has been announced.

ROBERT A. ALLWEIN moves to the Duncansville, Pa. plant as superintendent. He has been on special assignment at the Viking

Air Products Div. and had been superintendent of the Pacific Steel Boiler Div. at Bristol, Pa.

FRANKLIN Y. REITER, director of purchasing, has been named

plant manager at Duncansville. ROBERT A. HOY, general purchasing agent, has been upped to director of purchases for the company.

MARCO MOTORS offer you 3-WAY SUPERIORITY



IN DESIGN
IN APPLICATION
IN VOLUME PRODUCTION



MARCO INDUSTRIES, INC.

WOMELSDORF, PENNSYLVANIA

...you get more display with GLASS



...to build volume through impulse sales

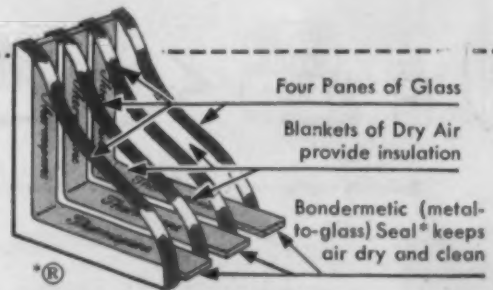
Thermopane® insulating glass gives you full visibility and insulation in the front of your cases.

Customers can always see the variety of your stock—clearly.

Clerks can instantly see when stocks need replenishing.

These are reasons why all leading manufacturers of ice cream cases feature visual fronts of *Thermopane* insulating glass.

Libbey-Owens-Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.



NO ORGANIC MATERIAL

Only *Thermopane* has the *Bondometric Seal* which prevents condensation between the panes of glass and keeps out dirt. There is no organic material to deteriorate.



RICHCO PLASTIC CLAMP

Tops for OEM use

Shock and chemical resistant, non-corrosive, strong and durable. Lowest cost anywhere. Let us quote your needs. All sizes from 1/8" to 1 1/2".

RICHCO PLASTIC CO.
4445 Fullerton Avenue
Chicago 39, Illinois



Thermopane
INSULATING GLASS

LIBBEY-OWENS-FORD
a Great Name in Glass

ARI Tabulates 22 Mfrs.' Room Air Conditioner B.t.u.h. Ratings

Some Add New Models, Others Revise Previous Ratings Up or Down

WASHINGTON, D. C.—The Air-Conditioning & Refrigeration Institute has released an up to date tabulation of room air conditioner capacity ratings of the 22 manufacturers who have made public the ratings of their units in terms of B.t.u./hr. in accordance with ARI Standard 110-56.

The compiled ratings of 21 manufacturers were released by ARI at its recent Hot Springs, Va. meeting. The 22nd manufacturer—Amana Refrigeration, Inc.—added its ratings last week.

All of these companies have published their ratings in consumer literature, specifications sheets, advertisements, news releases, or by filing them with the ARI offices for publication. These ratings are arrived at by tests conducted by the manufacturers themselves in accordance with the ARI standard.

The current listing brings up to date a tabulation published in the Feb. 18 issue of the NEWS. Some ratings published at that time have been revised either upward or downward, and some companies have added new models.

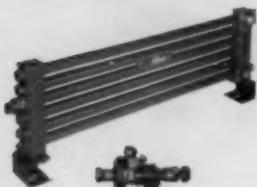
HIGH SIDE or LOW SIDE

heat-x Refrigeration and Air Conditioning Products

mean a better installation

The Heat-X line includes components for refrigeration and air conditioning systems as well as completely "packaged", ready-to-operate units... all in a wide range of sizes and capacities to fill a broad variety of contractors' needs.

All Heat-X equipment is soundly constructed, conservatively rated and features the most advanced engineering design.



'CIC' CONDENSERS An efficient water-cooled refrigerant condenser. Entire water circuit is of non-ferrous construction with cleanable tubes. Inner-fins in refrigerant tubes insure high heat transfer... occupy minimum space. FROM 1/2-15HP.



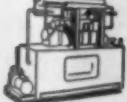
CAST COOLERS Refrigerant and liquid circuits are cast in solid block of aluminum, eliminating freeze-up problem... offering advantages of "hold-over" effect of cooled aluminum mass. FROM 15-65 GPH (@ 70°)



HEAT INTERCHANGERS Cast aluminum heat interchangers (1/4-10HP) and heavy duty heat interchangers (7 1/2-100HP) feature patented Inner-Fin construction in suction line. Units feature low freon charge and no oil trapping.



'OSM' OIL SEPARATOR MUFFLERS These units solve two problems common to refrigeration systems: silencing of system noises and separation of all entrained oil. No floats to bang open or stick closed. 'OSM' units are equipped with a positive-action Velocity Pressure Mechanism, 1-75 TONS exclusive with Heat-X.



Bulletins containing complete specifications FREE on request

HEAT-X, Inc.

BREWSTER • NEW YORK

Cable "BUSHEATX", Hartford, Conn.

Admiral

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|--------|-------------|--|
| 75U7 | 3/4 | 6,600 |
| 100U12 | 1 | 9,000 |
| 75M7 | 3/4 | 6,600 |
| 100M12 | 1 | 9,000 |
| 100M23 | 1 | 10,100 |
| 150M23 | 1 1/2 | 13,350 |
| 200M23 | 2 | 16,600 |

Airtemp

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|---------|-------------|--|
| 1675-12 | 3/4 | 6,300 |
| 1600-9 | 1 | 9,500 |
| 1600-10 | 1 | 9,100 |
| 1600-11 | 1 | 8,600 |
| 1600-13 | 1 | 8,400 |
| 1600-14 | 1 | 8,000 |
| 1615-1 | 1 1/2 | 12,900 |
| 1620-1 | 2 | 15,500 |
| 1775-3 | 3/4 | 6,600 |
| 1775-4 | 3/4 | 5,600 |
| 1850 | 1/2 | 5,300 |
| 1875 | 3/4 | 7,500 |
| 1800 | 1 | 9,000 |

Amana

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|---------|-------------|--|
| 75-LA2M | 3/4 | 6,000 |
| 75-ATM | 3/4 | 7,500 |
| 100-A2M | 1 | 8,400 |
| 100-A3M | 1 | 9,900 |
| 150-A3M | 1 1/2 | 13,100 |
| 200-A3M | 2 | 15,600 |
| 50-LD2M | 1/2 | 5,500 |
| 75-LD2M | 3/4 | 6,600 |
| 100-D2M | 1 | 9,100 |
| 100-D3M | 1 | 9,100 |
| 75-LF2M | 3/4 | 6,600 |
| 100-F3M | 1 | 10,200 |

Carrier

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|-----------|-------------|--|
| 51T3-1155 | 3/4 | 7,500 |
| 51T4-115 | 1 | 9,600 |
| 51T3-115 | 3/4 | 7,500 |
| 51T3-230 | 3/4 | 7,500 |
| 51T3-208 | 3/4 | 7,500 |
| 51T4-230 | 1 | 9,600 |
| 51T4-208 | 1 | 9,600 |
| 51T5-230 | 1 1/2 | 14,500 |
| 51T5-208 | 1 1/2 | 14,500 |
| 51A3-115 | 3/4 | 7,500 |
| 51A3-230 | 3/4 | 7,500 |
| 51A3-208 | 3/4 | 7,500 |
| 51A4-230 | 1 | 9,600 |
| 51A4-208 | 1 | 9,600 |
| 51A5-230 | 1 1/2 | 14,500 |
| 51A5-208 | 1 1/2 | 14,500 |
| 51N4 | 1 | 9,600 |
| 51A4 | 1 | 9,600 |
| 51W3-115 | 3/4 | 7,500 |
| 51W3-230 | 3/4 | 7,500 |
| 51W3-208 | 3/4 | 7,500 |
| 51W4-230 | 1 | 9,600 |
| 51W4-208 | 1 | 9,600 |

Coolerator

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|---------|-------------|--|
| 74CS5 | 3/4 | 6,200 |
| 74CS5T | 3/4 | 6,200 |
| 100CS5 | 1 | 8,700 |
| 100CS5T | 1 | 8,700 |
| 102CS0T | 1 | 9,400 |
| 74CD5 | 3/4 | 6,400 |
| 100CD5 | 1 | 8,800 |
| 101CD0 | 1 | 10,300 |
| 200CD0 | 2 | 16,100 |
| 200CD8 | 2 | 16,100 |
| 1WCS5 | 1 | 8,100 |
| 1WCS0 | 1 | 8,600 |
| 7WCD5 | 3/4 | 6,600 |
| 1WCD5 | 1 | 8,700 |
| 1WCD0 | 1 | 10,800 |
| 15WCD0 | 1 1/2 | 12,200 |
| R-1WCD0 | 1 | 10,800 |
| 1WCD8 | 1 | 10,800 |
| 15WCD8 | 1 1/2 | 12,200 |

Emerson Electric

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|-------------|-------------|--|
| AC7-10-15AT | 1 | 8,600 |
| AC7-10-30D | 1 | 9,100 |
| AC7-10-30T | 1 | 9,500 |
| AC7-15-30D | 1 1/2 | 12,500 |
| AC7-15-30T | 1 1/2 | 12,900 |
| AC7-20-30T | 2 | 15,500 |
| AC7-34-15AV | 3/4 | 5,400 |
| AC7-10-15AV | 1 | 8,000 |
| AC7-15-30V | 1 1/2 | 11,800 |
| AC7-34-15AC | 3/4 | 5,600 |
| AC7-10-15AC | 1 | 8,000 |
| AC7-34-15D | 3/4 | 6,100 |
| AC7-34-15T | 3/4 | 6,100 |
| AC7-34-15AD | 3/4 | 5,500 |
| AC7-34-15AT | 3/4 | 5,500 |
| AC7-10-15AD | 1 | 7,800 |

Friedrich

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|---------|-------------|--|
| 7W751S | 3/4 | 9,150 |
| 7W1002S | 1 | 12,050 |
| 7W1502S | 1 1/2 | 18,040 |
| 7W751D | 3/4 | 6,750 |
| 7W1002D | 1 | 9,750 |

Frigidaire

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|-----------|-------------|--|
| A50-57 | 1/2 | 4,500 |
| AE75S-57 | 3/4 | 6,500 |
| AE75-57 | 3/4 | 8,200 |
| A100-57 | 1 | 9,000 |
| AE100S-57 | 1 | 9,100 |
| AE100-57 | 1 | 10,000 |
| AE150-57 | 1 1/2 | 14,600 |

Emerson Quiet-Kool

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|-------|-------------|--|
| 7K1 | 3/4 | 7,700 |
| 7K2 | 3/4 | 7,700 |
| 7K7 | 3/4 | 6,150 |
| 9K1 | 1 | 8,300 |
| 9K2 | 1 | 9,250 |
| E761 | 3/4 | 7,700 |
| E767 | 3/4 | 6,150 |
| 7P1 | 3/4 | 7,800 |
| 7P2 | 3/4 | 7,800 |
| 7P7 | 3/4 | 6,250 |
| 9P1 | 1 | 8,400 |
| 9P2 | 1 | 9,400 |
| 1062 | 1 | 10,500 |
| 1562 | 1 1/2 | 13,500 |
| 2062 | 2 | 16,000 |

General Electric

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|--------|-------------|--|
| R-31P | 1/2 | 5,600 |
| R-41P | 3/4 | 6,700 |
| R-42P | 3/4 | 6,700 |
| R-51P | 3/4 | 7,700 |
| R-52P | 3/4 | 7,800 |
| R-53P | 3/4 | 7,700 |
| R-60P | 1 | 9,300 |
| R-61P | 1 | 9,400 |
| R-62P | 1 | 9,400 |
| R-71P | 1 | 10,500 |
| R-72P | 1 | 10,500 |
| R-73P | 1 | 10,200 |
| R-101P | 1 1/2 | 14,000 |
| RB-32P | 3/4 | 5,600 |
| RB-52P | 3/4 | 7,800 |
| RB-72P | 1 | 10,500 |

(Concluded on next page)

REMCO E-Z-SEE LIQUID INDICATORS ARE STANDARD FOR ORIGINAL EQUIPMENT

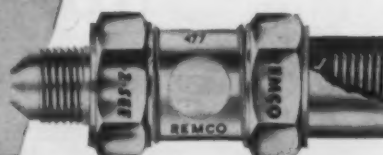
Remco hermetically sealed E-Z-SEE Liquid Indicators are used by more than 60 manufacturers.

They are available in brass or cadmium plated steel with flare or sweat connections. Sweat connections are swivel so that they can be soft or silver soldered with no danger from heat.

All steel indicators are UL approved for Freon-12 and -22. Write for low net prices and Bulletin R-11 for engineering details.

1/8" STANDARD

REMCO INC.
ZELIENOPLE, PA.



AVAILABLE TO THE TRADE THROUGH WHOLESALEERS EVERYWHERE

Gibson

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|---------|-------------|--|
| A-721C | 3/4 | 6,700 |
| A-731C | 3/4 | 6,200 |
| A-121C | 1 | 8,200 |
| A-152C | 1 1/2 | 12,000 |
| A-222C | 2 | 16,000 |
| A-751C | 3/4 | 6,700 |
| A-781C | 3/4 | 6,400 |
| A-102C | 1 | 8,200 |
| A-131C | 1 | 8,200 |
| A-122C | 1 | 9,000 |
| A-181C | 1 | 9,000 |
| A-1582D | 1 1/2 | 12,000 |

Kelvinator

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|-----------|-------------|--|
| RCG 101R | 1 | 8,230 |
| RCG 78RS | 3/4 | 6,775 |
| RCG 108RS | 1 | 8,195 |
| RCG-108R | 1 | 9,340 |
| RCG 158R | 1 1/2 | 11,550 |
| RCG 109WS | 1 | 8,535 |
| RCG 109W | 1 | 10,040 |
| RCG 159W | 1 1/2 | 12,380 |
| RCG 209R | 2 | 15,540 |
| RCG 78C | 3/4 | 6,560 |

Mira-Cold

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|--------|-------------|--|
| 775340 | 3/4 | 5,650 |
| 775100 | 1 | 7,900 |
| 774150 | 1 1/2 | 11,500 |
| 774200 | 2 | 13,600 |
| 773340 | 3/4 | 6,000 |
| 773100 | 1 | 9,050 |
| 772150 | 1 1/2 | 13,900 |
| 772200 | 2 | 15,500 |
| 770100 | 1 | 10,200 |
| 770150 | 1 1/2 | 15,500 |
| 770200 | 2 | 16,600 |

Westinghouse

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|----------|-------------|--|
| RW-200D2 | 2 | 16,600 |
| RW-75D | 3/4 | 7,700 |
| RW-75D2 | 3/4 | 7,700 |
| RW-100D2 | 1 | 10,800 |
| RW-150D2 | 1 1/2 | 13,500 |
| RW-50S | 1/2 | 5,400 |
| RW-75S7 | 3/4 | 6,600 |
| RW-100S | 1 | 9,000 |
| RWR-100S | 1 | 9,000 |
| RW-100S2 | 1 | 10,100 |
| 5AWC-75 | 3/4 | 6,560 |
| 5AWC-752 | 3/4 | 6,560 |

York

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|----------|-------------|--|
| E75AP | 3/4 | 7,500 |
| EG75AP | 3/4 | 7,500 |
| EM75AP | 3/4 | 7,500 |
| E75APH | 3/4 | 7,500 |
| EG75APH | 3/4 | 7,500 |
| EM75APH | 3/4 | 7,500 |
| E100AP | 1 | 9,000 |
| EG100AP | 1 | 9,000 |
| EM100AP | 1 | 9,000 |
| E100APH | 1 | 9,000 |
| EG100APH | 1 | 9,000 |
| EM100APH | 1 | 9,000 |
| E100APR | 1 | 9,000 |
| EG100APR | 1 | 9,000 |
| EM100APR | 1 | 9,000 |
| E50 | 1/2 | 4,900 |
| E75 | 3/4 | 7,500 |
| E75L | 3/4 | 6,250 |
| E75R | 3/4 | 7,400 |
| E100 | 1 | 9,500 |
| E100L | 1 | 9,000 |
| E100R | 1 | 9,400 |
| E150 | 1 1/2 | 14,300 |
| E200 | 2 | 16,000 |

Hotpoint

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|-----------|-------------|--|
| 117AM75 | 3/4 | 6,775 |
| 117AMS100 | 1 | 8,179 |
| 127AM100 | 1 | 8,230 |
| 127AM150 | 1 1/2 | 11,550 |
| 117ADS100 | 1 | 8,535 |
| 117AS100 | 1 | 8,350 |
| 127AD100 | 1 | 10,040 |
| 127AD150 | 1 1/2 | 12,380 |
| 117AMC50 | 1/2 | 5,075 |
| 117ADC75 | 3/4 | 6,560 |
| 127AD200 | 2 | 15,540 |

Manning-Bowman

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|-----------|-------------|--|
| MB 74CD5 | 3/4 | 6,400 |
| MB 100CD5 | 1 | 8,800 |
| MB 101CD0 | 1 | 10,300 |
| MB 200CD0 | 2 | 16,100 |
| MB 200CD8 | 2 | 16,100 |
| MB 1WCS5 | 1 | 8,100 |
| MB 1WSC0 | 1 | 8,600 |
| MB 7WCD5 | 3/4 | 6,600 |
| MB 1WCD5 | 1 | 8,700 |
| MB 1WCD0 | 1 | 10,800 |
| MB 15WCD0 | 1 1/2 | 12,200 |

Perfection

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|--------|-------------|--|
| A-341A | 3/4 | 7,000 |
| A-100A | 1 | 9,000 |
| A-340A | 3/4 | 6,700 |
| A-101B | 1 | 8,200 |
| A-151B | 1 1/2 | 12,000 |
| A-200B | 2 | 16,000 |

Whirlpool

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|----------|-------------|--|
| S-7100-3 | 1 | 9,700 |
| S-7100-2 | 1 | 8,600 |
| S-7150-3 | 1 1/2 | 12,800 |
| DP-775-2 | 3/4 | 6,000 |
| IP-775-2 | 3/4 | 7,000 |
| D-775-2 | 3/4 | 7,800 |
| I-7100-2 | 1 | 9,100 |
| I-7100-3 | 1 | 9,700 |
| D-7100-3 | 1 | 9,700 |
| I-7150-3 | 1 1/2 | 12,800 |
| D-7150-3 | 1 1/2 | 12,800 |
| C-7200-3 | 2 | 16,000 |

Sears, Roebuck

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|-------|-------------|--|
| 75134 | 3/4 | 7,000 |
| 75110 | 1 | 9,000 |
| 75310 | 1 | 8,800 |
| 75015 | 1 1/2 | 13,000 |
| 75215 | 1 1/2 | 13,000 |
| 77010 | 1 | 10,200 |
| 77215 | 1 1/2 | 13,900 |
| 77310 | 1 | 9,050 |
| 77334 | 3/4 | 6,000 |
| 77420 | 2 | 13,600 |
| 75015 | 1 1/2 | 13,000 |
| 77534 | 3/4 | 5,650 |
| 77510 | 1 | 7,900 |
| 77415 | 1 1/2 | 11,500 |
| 77220 | 2 | 15,500 |
| 77015 | 1 1/2 | 15,500 |
| 77020 | 2 | 16,600 |
| 87134 | 3/4 | 5,000 |

Sutton (Vornado)

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|---------|-------------|--|
| C50C-1 | 1/2 | 5,075 |
| C50C-1T | 1/2 | 5,075 |
| C75C-1 | 3/4 | 6,560 |
| C75C-2 | 3/4 | 6,560 |
| C75C-3 | 3/4 | 6,560 |
| D50C-1 | 1/2 | 5,360 |
| L75C-1 | 3/4 | 6,775 |
| S100C-2 | 1 | 8,230 |
| S100C-3 | 1 | 8,230 |
| D100C-1 | 1 | 8,195 |
| D100C-2 | 1 | 9,340 |
| D100C-3 | 1 | 9,340 |
| D150C-2 | 1 1/2 | 11,550 |
| D150C-3 | 1 1/2 | 11,550 |
| W100C-1 | 1 | 8,535 |
| W100C-2 | 1 | 10,040 |
| W100C-3 | 1 | 10,040 |
| W150C-2 | 1 1/2 | 12,380 |
| W150C-3 | 1 1/2 | 12,380 |
| M200C-2 | 2 | 15,540 |
| M200C-3 | 2 | 15,540 |
| F100C-2 | 1 | 8,120 |
| F100C-3 | 1 | 8,120 |

Welbilt

| Model | Nominal Hp. | B.t.u./hr. Capacity In Accordance w/ARI 110-56 |
|-------|-------------|--|
| 7832 | 3/4 | 6,000 |
| 7823 | 3/4 | 6,300 |
| 7837 | 1 | 8,500 |
| 7827 | 1 | 8,500 |
| 7839 | 1 | 8,500 |
| 7829 | 1 | 8,500 |
| 7023 | 1 1/2 | 13,000 |
| 7024 | 1 1/2 | 13,000 |
| 7025 | 2 | 15,500 |
| 7026 | 2 | 15,500 |

Dealer Elected Mayor

DUNLAP, Tenn.—New mayor of Dunlap is Ray Harmon, owner of an electrical appliance and TV store here. He defeated Creed Heard, former mayor, by a vote of 109 to 96.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

"OFF-CYCLE" DEFROST
MADE OBSOLETE!

with new economical
system for Fresh Foods!

See **KRAMER** advertisement,
center spread, in next week's NEWS!

THE ANSWER TO ALL YOUR
CLEANING AND DESCALING PROBLEMSThe
NEWHASTINGS
CLEAN-IT

A BIG TIME AND MONEY SAVER!

FOR CLEANING ALL TYPES OF CONDENSERS

COIL SURFACES COIL TUBES
COOLING TOWERS BLOWER WHEELS
WATER HEATERS AIR HANDLING UNITS

FEATURES INCLUDE

ACID-RESISTANT TANKS • ACID-RESISTANT PUMPS •
UNITS REVERSABLE FOR PRESSURE OR SUCTION •
SNAP-ON FITTINGS • RUBBER TIRED WHEELS • STAIR-SKIDS

HASTINGS
CLEAN-IT

Eliminates the hazards and
mess of old-fashioned
cleaning methods
UNCONDITIONALLY GUARANTEED

Write for Prices and Bulletin AC-57-C

HASTINGS AIR CONTROL, INC. 3215 Leavenworth
Omaha 5, Nebraska

HASTINGS
HOIST-IT

INSTALLS ATTIC
AIR CONDITIONER
IN 45 MINUTES



SAVE
MONEY
TIME
AND
TROUBLE

'HOIST-IT' HAS MANY USES

Transom And Attic Units Quickly Installed. Two Men
Can Raise 4,000 Lbs. To 18 Ft. Ceiling. Model 80 Will
Raise 8,000 Lbs.

HASTINGS
HOIST-IT

Often Pays For Itself
On One Job

Write for Prices and Bulletin AC-57-H

HASTINGS AIR CONTROL, INC. 3215 Leavenworth
Omaha 5, Nebraska



—KEY NO. G-5311—

MOBILE FRIGID CABINET, powered by a self-contained 1/4-hp. compressor is demonstrated by Ilze Taurins for Crescent Metal Products, Inc. Of 19-cu. ft. capacity, it is equipped with adjustable tray racks or angle ledges and three glide-out shelves.

What Was New At the Restaurant Show



—KEY NO. G-5312—

PUSHING CUP AGAINST THE vertical lever beneath the dispenser heat enables Virginia Tannehill of Stanley Knight Corp. to draw a drink with one hand. The dispenser is part of a Stanley Knight soda fountain unit.



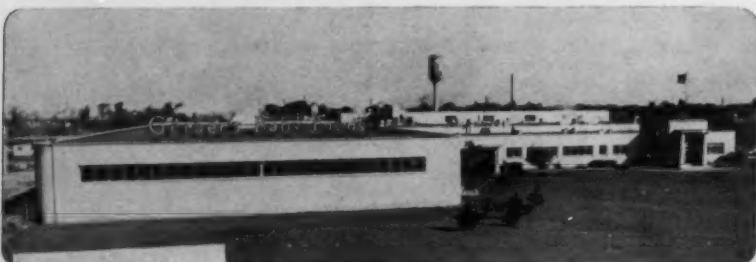
—KEY NO. G-5313—

HEATED DISPLAY CASE with controlled humidity to match its standard refrigerated fixture is shown by Lern, Inc. Milton Graupe, Lern representative (I.), tells Aloy P. Schaeffer of Crown Fixture & Supply Co., Aurora, Ill. that electric heating coils are behind mirror in back of case.



—KEY NO. G-5314—

MILK REFRIGERATOR with drop down front for school cafeterias (foreground) and broiler refrigerator for installation next to broiler were new in Foster Refrigerator Corp. booth. Gerry Russell, Minneapolis regional sales manager for Foster (I.), discusses the 35-cu. ft. welded all aluminum refrigerator with A. G. Carpenter of Ragan Refrigeration, Charlotte, N. C.

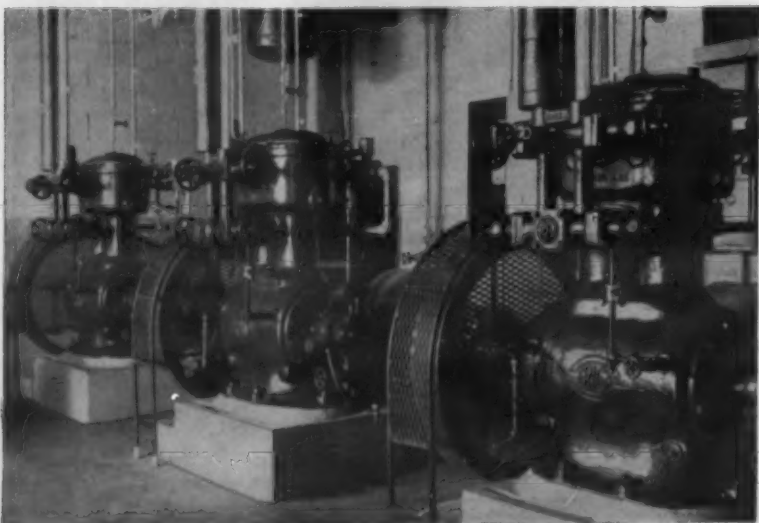


GERBER'S BABY FOODS Made at Rochester with FRICK REFRIGERATION

These famous foods, described in the October Reader's Digest, are revolutionizing the feeding of youngsters.

We are proud to have furnished the cooling system for Gerber's new plant, where 500,000 jars of strained foods are packed daily. Installation (full-automatic) by Mollenberg-Betz Machine Co., Frick Distributors at Buffalo.

Specify Frick refrigeration, air conditioning, ice making or quick freezing for that important cooling system of yours. Literature and estimates on request: write today to



Three Of Six Frick Ammonia Compressors At Gerber's

Products shown on this and the following page were shown at the National Restaurant Association Show in Chicago. For more information on these items, please use Key Numbers and the "Information Center" blank on page 32. Other products will be shown in future issues.

Newest Developments, Latest Refinements Promised at ARI Show

WASHINGTON, D. C.—Many of the newest developments in the art of air conditioning and refrigeration—from 1958 designs of end products to the latest refinements in some of the unseen but vitally essential parts in cooling system—will be seen at the 10th Exposition of the Air Conditioning and Refrigeration Industry Nov. 18-21 in Chicago's International Amphitheatre, according to George E. Mills, director of ARI shows.

"We have not only a wider variety of exhibits this year," Mills said "but in addition the promise that the late models and new developments will draw a greater number of potential buyers and users than ever before."

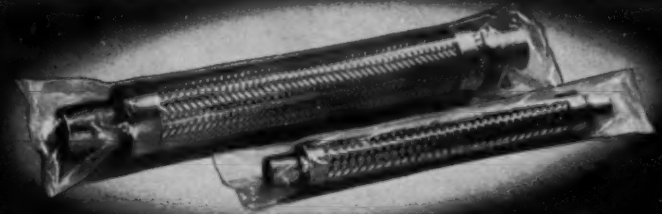
"We have received many inquiries from distributors, architects, engineers, builders, and contractors in all parts of the country, indicating that they plan to be in Chicago for the event."

Some choice space is still available, the show director indicated, although sales have now almost reached the level of the Ninth Exposition, held in Atlantic City in 1955. "And the show is still six months away," he added.

A number of exhibitors have come in "cold" without solicitation, Mills said, indicating that there may be some others who have not received information on the show.

Those who have not received exposition information may get the complete data by writing to Show Director, Air-Conditioning & Refrigeration Institute, 1346 Connecticut Ave., N.W., Washington 6, D. C., the institute explained.

FLEXON VIBRA-SORBERS®



CLEAN... INSIDE AND OUT!

NOW AVAILABLE FROM FLEXONICS

Flex-O-Tube synthetic Freon-resistant hose for refrigeration and air conditioning service. Also, flexible metal connectors for circulating pumps. Write for information.

Here's positive protection against the introduction of dirt and foreign matter into refrigeration and air conditioning systems. Flexon Vibra-Sorbers, come to you clean in sealed polyethylene bags.

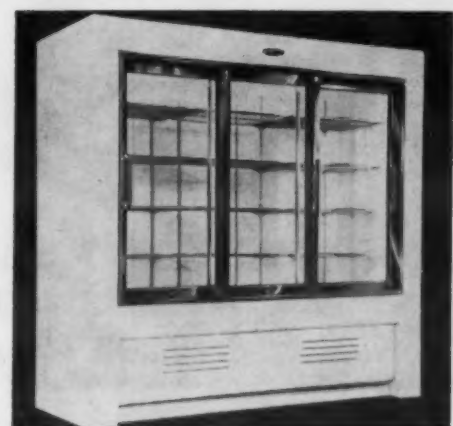
Prior to this operation, Vibra-Sorbers are bathed in solvents, pickled, multiple washed and dried in infra-red dryers. For trouble-free installations use Flexon Vibra-Sorbers, the preferred way to isolate vibration in compressor piping. U.L. listed in sizes 3/8" through 1 1/2" for both high and low side service. Standard sizes to 8" available. Write for Bulletin 139, today.



Flexonics Corporation
1415 S. Third Avenue
Maywood, Illinois

Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

SLIDING DOOR BEVERAGE COOLER



2 DOOR — 59"
3 DOOR — 82"
4 DOOR — 108"

Write, Wire or Call For Details

NATIONAL MARKET EQUIPMENT CO.
25531 DEQUINDRE ROYAL OAK, MICH. Lincoln 5-0900



—KEY NO. G-5318—

CART PASS-THRU refrigerator with base recessed into floor so that cart can roll into refrigerator and can be taken out the other side is feature of Herrick Refrigerator Co. display. R. D. Gray (l.) southeastern representative for Herrick, explains to Angelo and Thomas Mathews, Daphne, Ala. restaurateurs, that floor thickness can be varied to meet specifications. Refrigerator can be made to fit any standard size cart.



—KEY NO. G-5315—

CARBONATED BEVERAGE dispenser combined with an ice flaker is space saver exhibited by Cold Corp. of America. Chris Michaels draws one.



—KEY NO. G-5316—

OVERHEAD TRACK for sliding doors on Dunhill Food Equipment Corp.'s new "Veri-Kold" salad case is indicated by Carl Thaw (l.), Dunhill secretary, for Mrs. George Stathakis of Pete's Barbeque in Lyons, Ill. Vertical front of case leaves shelf on which to set dishes while opening doors.

—KEY NO. G-5317—

ONE PIECE VALVE replaces valve formerly held with screw pins in Norris Dispensers, Inc. bulk milk vendor. Mrs. Elaine Chapman, Norris advertising manager, indicates with her thumb refrigerated shelf that keeps milk cold to last drop.



PRIMORE AUTOMOTIVE AIR CONDITIONING VALVES

are rapidly becoming the standard of the industry

Here's why—

- Designed especially for Automotive use
- Precision manufactured
- Hydrogen brazed steel construction cuts costs

Primore's engineers have designed a series of Compressor Pad Valves and fittings especially for Automotive Air Conditioning units.

In addition, Primore engineered valves are also available for automotive air conditioning components such as Condensers, Receivers, Evaporators, etc.



NEW PRIMORE REFRIGERATION VALVE CATALOG NOW AVAILABLE

Complete details and data for Household and Commercial Refrigeration, Residential and Automotive Air Conditioning valves and fittings. Write, or phone for your copy.



Primore Sales, Inc.

310 National Bank Bldg. Adrian, Mich.

designing • sales • engineering

"HIGH EARNING SALES POSITIONS OPEN" for Commercial Air Conditioning Salesmen

Only top caliber men qualified to sell commercial air conditioning need apply. We are not looking for "price bidders" or "estimators." If you know how to sell and are willing to work—

YOU CAN

- EARN MORE**—start at \$700.00 per month drawing account.
- plus —\$100.00 per month reimbursed expense account
 - plus —gas and oil for your car
 - plus —unlimited earnings from commissions above drawing account
 - plus —annual bonus of one-half the profits made on your department's sales
 - plus —health for your family living in beautiful Southern California
 - plus —an apparently inexhaustible market
 - plus —the advantages of being associated with a growing air conditioning firm

- doing in excess of \$1,500,000 annually in air conditioning installations
- employing four (4) licensed mechanical engineers
- maintaining a full time mechanical drafting department
- operating a 24-hour a day, seven day a week service department
- an experienced organization with top level personnel who believe in the future of air conditioning

Reply at once to:

SOUTHLAND HEATING & AIR CONDITIONING, INC.

3605 LONG BEACH BLVD., LONG BEACH 7, CALIFORNIA

Attention: Mr. Donald S. Will, President

NLRB Orders UA Local To Stop Causing Carrier Employee Discrimination

WASHINGTON, D. C.—The National Labor Relations Board has ordered United Association Local 392 in Cincinnati to cease and desist from causing or attempting to cause Carrier Corp. to discriminate against its employees, it was recently announced.

The order came in a case filed in 1954 by a pipefitter-welder who charged that the union had caused Carrier to discharge him because he was not in good standing with the union, it was stated.

NLRB also ordered the union to make good the pay that the pipefitter had lost because of this discrimination, it was explained.

Last summer, the trial examiner had recommended that the unit be required to stop using an agreement with Carrier Corp. which contains or involves oral terms and conditions of employment requiring membership in good standing in the local.

The board, however, found that there was insufficient evidence to show that such an agreement existed, it was noted.

GET MORE BTU'S OUT OF YOUR COMPRESSOR!

without extra cost, too!

See **KRAMER** advertisement, center spread, in next week's **NEWS!**

In Stanford University's New Music Center



Architects—Milton T. Pfueger, Eldridge T. Spencer & William Clement Ambrose
Consulting Engineers—Buonaccorsi & Murray
Mechanical Contractor—James A. Nelson Company

only the music shall be heard!



thanks to

IAC Quiet **Duct**
packaged standardized silencing

The air-conditioning and ventilating system of Stanford University's new Music Center was silenced in the design stage with rated IAC Quiet-DUCTS!

Pre-fabricated in as many as 148 sizes, these economical Quiet-DUCT units measuring in length from 2 to 10 feet, provide as much noise control as a conventional lined duct measuring from 30 to 100 feet long!

COMPLETE DATA AVAILABLE

Write today for a complete set of data sheets and catalog describing prefabricated "Quiet-DUCT" units.

Industrial Acoustics Company, Inc.

Specialists in Noise & Pulsation Control

341 Jackson Avenue, New York 54, N. Y. CYPRESS 2-0180

CORROSION

Part 7—Plastic Pipes

(Second of Two Sections)

By Frank J. Versagi, Chief Chemist,
Mueller Brass Co., Port Huron, Mich.

In addition to the flexible polyethylene pipe which we discussed in our last article, there are three common rigid or semi-rigid pipes—PVC, "Kralastic," and butyrate. Although not as rigid as metal pipe, these plastic pipes are supplied in 10 or 20-ft. straight lengths.

Uses Overlap

While each of the rigid pipes has applications for which it is best suited, the general uses of these pipes—especially PVC and Kralastic—overlap somewhat.

All of the pipes offer resistance to corrosion, ease of handling, and relative low installed costs which make them very competitive with metal piping where temperature and pressure limitations permit.

PVC, as polyvinyl chloride is usually called, is a multi-purpose rigid pipe which is supplied in two types—"normal impact" and "high impact." The first is always supplied in dark gray; the latter in light gray.

While either type can be used for most purposes, normal im-



FITTING plastic pipe by solvent welding.

pact is preferred where extremely high chemical resistance is required—as in heavy chemical industries. The refrigeration serviceman, working with systems that create considerable vibration, water hammer, and similar physical strains, would most likely use high impact PVC.

The basic PVC compound from which the present piping material was developed has been in use in Germany for some 20 years. The greatest present use of PVC is in industrial piping—paper mills, chemical plants, anywhere where either internal or external corrosion is a problem. PVC is also finding increasing applications in utilities companies, supplying water and gas.

Kralastic is the trade name for a complex plastic-rubber blend. It is sometimes referred to as styrene copolymer or acrylonitrile alloy. The pipe is supplied in black and gray with the trend being to standardize on black. Generally speaking, Kralastic is interchangeable with high impact PVC, but will not carry the highly potent heavy chemicals as well as normal impact PVC.

Has Many Uses

Presently, Kralastic is being used extensively in the oil country for salt water disposal lines, for natural gas supply lines to irrigation pumps, for irrigation lines, and for deep wells. Some crude oils are pumped through Kralastic, but not high-wax oils for the reason which will be mentioned under the discussion of butyrate.

Kralastic has the highest allowable working temperature of all common plastic pipes, 175° F.

Butyrate (cellulose acetate butyrate) is easily recognizable by its shiny black appearance and its slightly medicinal odor. Because of this odor and a slight taste which the pipe imparts to water, butyrate is not recommended for handling drinking water. (The taste is harmless, but disagreeable).

COMPARISON BETWEEN SOLVENT WELDED PIPE AND STANDARD (SCHEDULE 40) PIPE

| Nominal Pipe Size | SWP | Std. | SWP | Std. |
|-------------------|-------|-------|-------|-------|
| 1/2" | .600 | .840 | .500 | .622 |
| 1" | 1.140 | 1.315 | 1.000 | 1.029 |
| 1 1/2" | 1.730 | 1.900 | 1.550 | 1.610 |
| 2" | 2.250 | 2.375 | 2.040 | 2.067 |

TEMPERATURE AND PRESSURE LIMITATIONS OF PLASTIC PIPES (SCHEDULE 40)

| Pipe | Max. Working Pressure (p.s.i.) | Max. Working Temp. °F. |
|-----------------|--------------------------------|------------------------|
| Polyethylene | 104 | 125 |
| PVC | 410 | 165 |
| Kralastic | 292 | 175 |
| Butyrate (SWP) | 100 | 140 |
| Galvanized Iron | 500 | 600 |
| Copper "K" | 250 | 400 |
| Stainless Steel | 725 | 650 |

APPROXIMATE INSTALLED COST OF 100' of 2" PIPE (Including Necessary Fittings)

| Pipe | Cost/Foot |
|-----------------|-----------|
| Polyethylene | \$1.10 |
| PVC | 1.75 |
| Kralastic | 1.60 |
| Butyrate | 1.40 |
| Galvanized Iron | 1.25 |
| Copper "K" | 2.10 |
| Stainless Steel | 3.75 |

Butyrate is chiefly found in the oil fields where it is used for transmitting crudes. Because of its extremely smooth inner wall, butyrate does not build up with paraffin wax as do metal lines and even some of the other plastic pipes.

Butyrate is being promoted for outdoor electrical conduit and raceways. In thinner walls and in transparent form, it was one of the first plastics used by gas companies as replacement for old iron service lines. The flexible butyrate is pulled through existing installations, providing inexpensive replacement.

All of the rigid pipes have obtained the seal of approval from the National Sanitation Foundation for use with drinking water. There is not the confused quality situation with the rigid pipes that there is with polyethylene.

(Continued on next page)

PROTECT YOUR AIR-CONDITIONING CONTROLS AGAINST MOISTURE

with ALLEN-BRADLEY

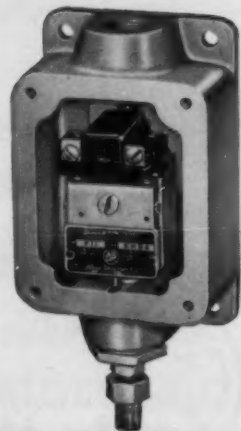
WATERTIGHT ENCLOSURES

In damp or wet locations, your motor controls need the complete protection provided by Allen-Bradley watertight enclosures. A watertight cover gasket keeps out moisture and fumes.

Allen-Bradley has the correct enclosure to satisfy any operating requirement. They are listed in the A-B Handy Catalog which is an encyclopedia of controls for air conditioning and refrigeration.

Write for your copy, today.

Allen-Bradley Co.
1313 S. First St., Milwaukee 4, Wis.
In Canada—
Allen-Bradley Canada Ltd., Galt, Ont.

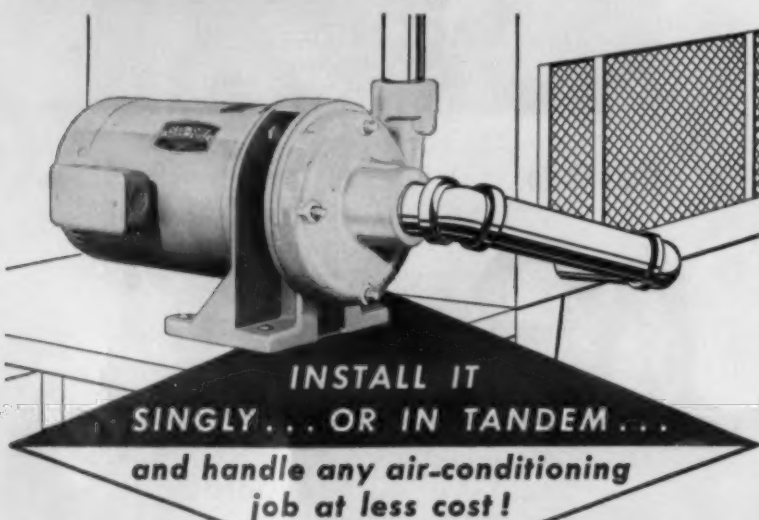


Bulletin 836 pressure switch in Type 4 watertight enclosure.



The Sign of
QUALITY
MOTOR CONTROL

ALLEN-BRADLEY
SOLENOID MOTOR CONTROL
QUALITY



STA-RITE AIR-CONDITIONING PUMP

You'll go a long way—installing condensers, towers, chillers—when you hook up with new Sta-Rite Type AC pumps. It's easier to make money on these pumps. Prices are right in line with the lowest. Installation costs are less because these pumps are small, easy-to-handle—easy to "fit-in." Size for size, you can't find a pump that's better made. For instance, capacitor, ball bearing motors are full power—specially designed for these pumps. 12 models, to handle any installation. 220 GPM. Heads to 170 feet. Much higher capacity with tandem installations.

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Plastic Pipe Uses -

(Continued from preceding page)

For industrial purposes, the rigid pipes, especially PVC and Kralastic, are supplied in IPS schedules 40, 80, or 120. (The Navy, in piping every ship for radioactive washdown, is using Schedule 120 PVC).

For economy, thinner walled schedules have been introduced and these are used chiefly where low pressures are involved—such uses as sprinkling systems. Thin walled schedules are called SWP (Solvent Welded Pipe).

All Schedules Fitted By Solvent Welding

Actually, all the schedules, including IPS sizes, can be fitted by solvent welding; in fact, this is the most popular method of joining because of its speed. The outside of the pipe and the inside of a socket fitting are



TYPICAL fittings for rigid plastic pipe showing both solvent welded and threaded fittings.

brushed with a suitable solvent. The two are mated and twisted slightly and the joint is complete. It is not recommended that full pressure be put on the pipe for 24 hours, but the pipe may be moved within a few minutes.

The IPS sizes may be threaded, although most suppliers do not recommend threading schedule 40. Normal threading dies can be used, but it is wise to reserve tools just for plastic. Because even the rigid pipes are somewhat flexible, more even threads can be cut if a tapered wooden plug is inserted before threading.

Rigid Pipes Have Higher Pressures, Temperatures

The rigid plastic pipes generally have higher working pressures and slightly higher working temperatures than polyethylene, but these properties are still low when compared to metal piping. Rigid plastic piping is justified either where premium piping, such as monel or stainless, is being used or where regular piping is constantly being replaced or maintained.

Stronger than polyethylene, they are also used in radiant heating, skating rinks, and cooling towers.

While plastic pipes will never completely replace copper, iron, steel, and aluminum, they are no longer mere substitutes as they once were. It is predicted that plastic piping will capture 15% of the metal pipe market.

The four plastic pipes discussed in these articles all have case histories of years of successful application; they all have had some failures in most cases due to misapplication. As new materials, plastic pipes have a long way to go before being completely accepted, but they are well on their way and they are here to stay.

Alert refrigeration people, like all tradesmen, have no choice but to keep aware of plastic pipe and to begin considering use where applicable.

Cooling Installations In Cars by Chrysler Rise

DETROIT—Current installations of auto air conditioning reflect its growing popularity, according to a spokesman for the Chrysler Corp.

The firm reported sales of air conditioning on Plymouth and Dodge cars as three times above '56 model year.

Increase in installations in DeSoto cars was also reported, while 11.1% of Chrysler and Imperial lines are being equipped with air conditioning as compared with 6.8% in '56.

Lima Adds Operation, Expands Production

LIMA, Ohio—Commercial air conditioning registers went into production here in May, the Lima Register Co. announced.

Tooling is completed now, according to N. F. Jones, general manager, for this addition to its warm air heating and forced air cooling registers, diffusers, and grilles.

Earlier this year Lima Register started production of draft controls through transfer of operations of the Windmaster Corp., Columbus, Ohio, to the local plant, it was pointed out. The new commercial register line will include special louvers and dampers not in present production units.

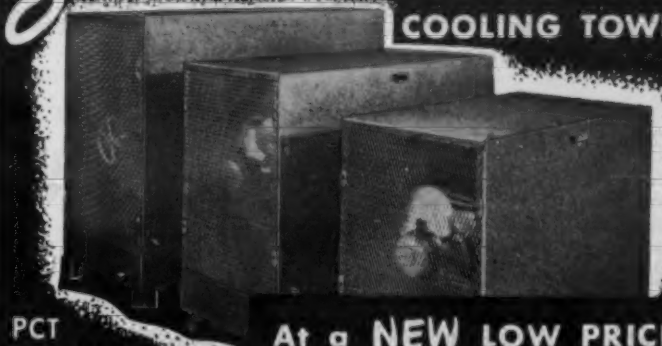
Supply Firm Offers 'Supermarket' Services

JACKSON, Miss.—A supermarket type store was opened here recently by Mississippi Refrigeration Supply Co. Located at 1400 Terry Rd., the store features "self service" and has window display area across the whole front.

The whole store is air conditioned.

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LOS ANGELES, 4710 Crenshaw Blvd., AXminster 2-9501, Justin Hannon.

DETROIT, 450 West Fort St., WOodward 2-0924, J. B. Sullivan.



CRMA Sees Good Year In '57--

(Concluded from Page 1, Col. 5) So than in any comparable recent period, it was noted.

It was reported that the voluntary chain movement being promoted among independent grocers by progressive wholesale grocery companies is making effective headway in the competitive melee.

FOOD SERVICE FIELD

Another virile source of business, the discussion showed, is the food service or kitchen equipment market, comprising hospitals, institutions, and eating establishments, which are absorbing a greater share of the industry output each year. Manufacturers specializing in this field reported volume increases thus far in 1957 ranging as high as 25%.

Much of the information responsible for the encouraging verdict arrived at in the meeting was supplied by a panel of executives composed of C. V. Hill, president, C. V. Hill & Co., J. L. Kaufhold, vice president of sales for Weber, and William T.

McCall, president, McCall Refrigerator Co., with CRMA's president, Joseph W. Krall, president of McCray Refrigerator Co., as general chairman of the two-day session.

Under the provocative title, "Project X," another panel explored the management problems confronting the industry, reaching the conclusion that, except for the common bugaboo of constantly rising costs and shrinking profit margins, the positive factors outweigh all negative considerations to a sufficient extent to warrant a reasonable degree of optimism.

The panel was of the opinion, for example, that full employment may be expected to continue for the foreseeable future, with the government stepping in whenever necessary to avert serious economic dislocations. It reminded the group that the one thing people cannot do without is food.

NEW PRESERVATION PROCESSES DISCUSSED

New food preservation processes involving irradiation or freeze drying techniques now undergoing extensive experimentation, chiefly by military agencies, does not, in the panel's opinion, represent a serious threat to refrigeration, but it was agreed that such developments should be closely watched.

Attention was also called to the growing popularity of treating perishable foods with antibiotics, which calls for adequate refrigeration in all stages from the point of origin to the consumer. The process is now being used by the poultry industry in the United States, and by the fishing industry as well in Canada, the discussion revealed.

The panel members were solidly of the opinion that the

commercial refrigerator, "1957 model," has shown tremendous progress in meeting today's exacting problems and fulfilling the needs of an entirely different type of customer than he was serving a decade ago. Whereas then, the panel reminded, the typical sale might consist of one or two display cases, and perhaps a walk-in cooler, today's distributor must be prepared to sell, install, and service complex multi-unit jobs running into six figures.

He thus may be required to provide a complete store planning and layout service, often extending to assisting prospective buyers in locating a proper site, helping secure the necessary financing, and furnishing complete architectural and engineering services.

In complimenting the industry's distributors for their ability to meet these challenges, a tribute was paid to the National Commercial Refrigerator Sales Association for the splendid job it has done in encouraging its members to apply sound business principles.

Members of the "Project X" panel were Lester O. Bower, executive vice president Sherer-Gillett Co.; Roger D. Jacobs, executive vice president, The Warren Co.; and Reese L. Harrison, president, Friedrich Refrigerators, Inc.

The discussions also featured a report on credit and financing trends affecting the industry by Mark Allen, Weber treasurer, Earl J. Kressler, credit manager for Hill, George H. Mayhew, secretary-treasurer, Tyler Refrigeration Corp., and W. B. McMillan, president, Hussmann Refrigerator Co.

It was concluded that while the current tight money situation undoubtedly has been responsible for slowing up the tempo of large-unit food store

construction, which got under way shortly after World War II, its chief result has been to discourage the speculative type of operation, which in the long run should prove beneficial to the equipment supplier and established merchant alike.

5-YR. FINANCING

The availability of five-year financing through a major finance company was brought up. It was pointed out, however, that the restrictions being imposed by this source of credit are such as to permit only the most secure type of risk to qualify, and no doubt will apply to exceptionally large installations where extended terms are clearly necessary to help assure the success of the supermarket or other large volume food retailing venture.

The panel members were of the opinion that the great majority of time sales will continue to be based on terms of from 24 to 36 months, with traditional adherence to an adequate cash down payment policy. Defaults and repossession continue at an extremely low and favorable rate, it was noted.

The second day of the session featured a tour of the Weber refrigerator factory by representatives of the engineering and production staff of a majority of the member manufacturers. They found not only that Weber is one of the most widely diversified operations in the industry but have achieved an enviable degree of automation through liberal use of special machinery, much of it of their own design.

Cooling Survey--

(Concluded from Page 1, Col. 4) have been good. Both MIT engineers and Allied's men are busy surveying consumers' homes. Charge to each customer is \$3.50, which includes a complete report as to whether room air conditioners are appropriate or whether central air conditioning would perform better and the amount of cooling capacity needed.

Central Units--

(Concluded from Page 1, Col. 5) tems Section.

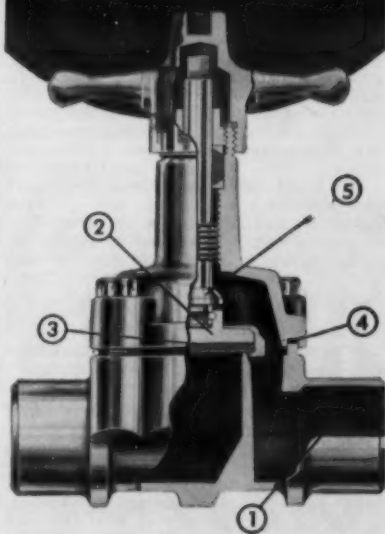
Installed value of systems put in operation each year since 1950, based on figures reported to ARI is estimated at:

| | |
|------|---------------|
| 1950 | \$241,770,000 |
| 1951 | 278,200,000 |
| 1952 | 252,920,000 |
| 1953 | 295,040,000 |
| 1954 | 378,810,000 |
| 1955 | 434,120,000 |
| 1956 | 556,670,000 |

Actual cost of compressors, condensing units, absorption and adsorption systems, and centrifugal systems of 25 hp. and over (the sizes covered by the above figures) is estimated at about 10% of the installed value of central-station systems. The remainder includes labor, ducts, controls, insulation, plumbing, and all other installation costs.

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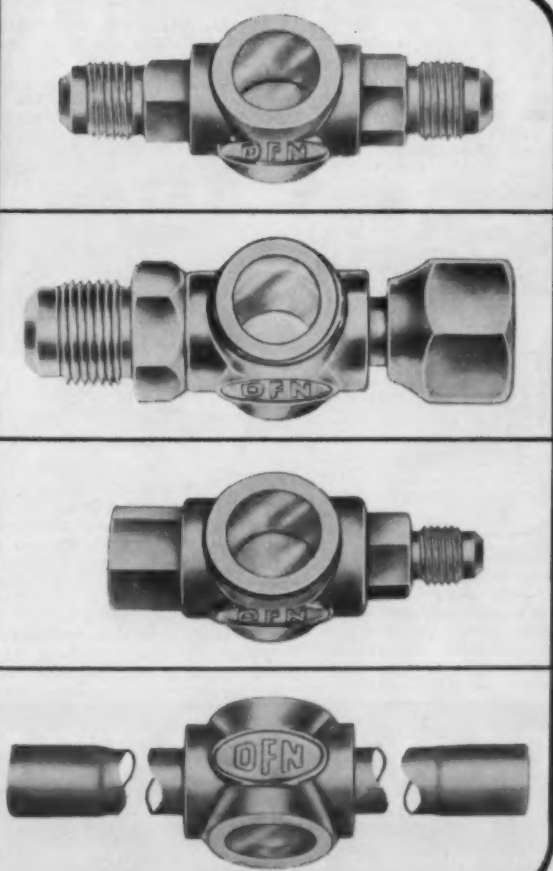


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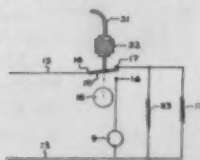
THE McINTIRE COMPANY, Livingston, N. J.
Makers of DFN DRIERS • FILTERS • STRAINERS
Since 1925



PATENTS

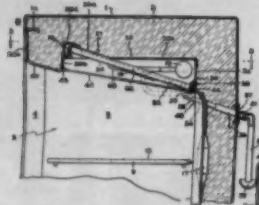
Week of Feb. 12
(Concluded)

2,780,924. REFRIGERATING APPARATUS HAVING AUTOMATIC DEFROSTING. Bruce B. Latter, Louisville, Ky., assignor to General Electric Co., a corporation of New York. Application Nov. 14, 1955, Serial No. 546,311. 4 Claims. (Cl. 62-4.)



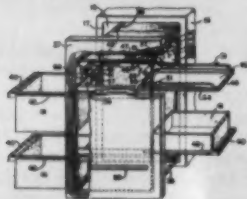
1. In a refrigerator, an insulated cabinet having a food storage compartment, a refrigeration system including a compressor and an evaporator for cooling said compartment, first heating means for defrosting said evaporator, defrost-initiating means to simultaneously activate said first heating means and to de-activate said compressor, pressure actuated means for de-energizing said first heating means and energizing said compressor, an expansible-gas bulb in thermal contact with said evaporator communicating and forming with said pressure actuated means a closed chamber, second heating means for heating portions of said closed chamber other than said expansible-gas bulb, said defrost-initiating means also activating said second heating means with said first heating means, said second heating means being of such capacity that said bulb is at a lower temperature than the remaining portions of said closed chamber during defrosting of said evaporator, and said pressure actuated means acting upon a predetermined temperature in said evaporator to deactivate said first and second heating means.

2,780,925. REFRIGERATING APPARATUS HAVING AUTOMATIC DEFROST. Thomas A. McGraw, Fern Creek, Ky., and Robert A. Wachter, Glens Falls, N. Y., assignors to General Electric Co., a corporation of New York. Application Nov. 21, 1955, Serial No. 547,904. 9 Claims. (Cl. 62-4.)



1. In a refrigerating apparatus, a cabinet comprising inner and outer spaced-apart casings with thermal insulation disposed between said casings, said inner casing defining a food storage compartment, an insulating breaker strip connecting together the edges of said casings and defining an opening for said compartment, a door for closing said opening, said breaker strip being of substantially U-shaped configuration along the top of said opening and having a substantially L-shaped rear end extending upwardly and forming with the top wall of said storage compartment a recessed area, a plurality of serially connected, vertically spaced evaporators within said compartment with the upper evaporator extending across said compartment top inner wall and into said recess.

2,780,926. WALL MOUNTED REFRIGERATING APPARATUS. Verlos G. Sharpe, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Jan. 13, 1955, Serial No. 481,592. 5 Claims. (Cl. 62-89.)



1. A refrigerating apparatus comprising, an insulated compartment having a front opening, a closed refrigerating system including an evaporator for cooling the interior of said compartment, a frame within said compartment, a door stationarily secured to an end of said frame for closing the open front of said compartment, means mounting said frame for movement outwardly of the open front of said compartment, a food supporting shelf slidably mounted on said frame, said shelf being movable relative to said frame in a direction trans-

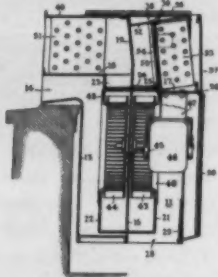
verse to the direction of movement of the frame outwardly of said compartment, a cover pivotally mounted on said frame and extending upwardly from an end of said shelf for shielding food products supported thereon when said frame is moved outwardly of said compartment, and means rendered effective in response to moving said shelf relative to said frame for rotating said cover about its mounting.

2,780,928. AUTOMOBILE AIR COOLER. Oakie P. Bullock, Wichita, Kan. Application Nov. 13, 1953, Serial No. 391,877. 8 Claims. (Cl. 62-117.)



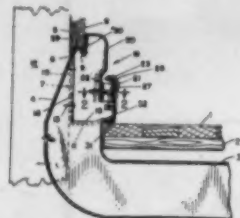
5. In an air conditioning unit, an elongated housing generally open at both ends to provide for the flow of air through it, a refrigerating unit within the housing for the compression and expansion of a refrigerant, including a compressor, a condenser in communication with the compressor, an evaporator in communication with the condenser, expansion means between the condenser and evaporator, the evaporator being in communication with the compressor, the forward open end of the housing having a fan disposed in it so as to substantially fill the opening, the housing behind the fan being divided into two spaces, one above the other, one containing the evaporator, the other containing the condenser so that air entering the forward end of the housing will pass through either the condenser or the evaporator, the compressor being positioned behind the evaporator and condenser and aligned with both of them, means for exhausting the air that passes through the evaporator separately from the air that passes through the condenser, and means for operating the compressor.

2,780,929. AIR COOLED UNIT AIR CONDITIONER. Richard E. Roseman, York, Pa., assignor, by mesne assignments, to Borg-Warner Corp., Chicago, Ill., a corporation of Illinois. Application March 7, 1956, Serial No. 570,111. 8 Claims. (Cl. 62-129.)



6. In an air conditioner, the combination of a cooling unit; a fan for circulating air into heat-exchanging relation with said unit and then discharging it into a space to be conditioned; a slot nozzle through which said discharge occurs, said nozzle discharging the air in a direction and at a velocity which will induce air circulation in the space to be conditioned, and the nozzle including a part movable to adjust the area of its slot; a variable-speed motor connected to drive said fan; a controller operable to change the speed of the motor; and a connection between the movable part of the nozzle and said controller such that the motor is slowed when the nozzle opening is reduced.

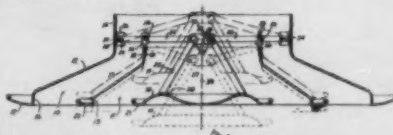
2,780,979. BASEBOARD CONSTRUCTION. William C. De Roo, Holland, Mich., assignor to Hart & Cooley Mfg. Co., Holland, Mich., a corporation of Delaware. Application June 14, 1951, Serial No. 231,585. 8 Claims. (Cl. 98-40.)



1. A baseboard construction for perimeter heating of an enclosed area having a floor and walls comprising an elongated back plate secured to the studding of the wall, the upper longitudinal edge of said plate terminating adjacent the lower edge of the wall

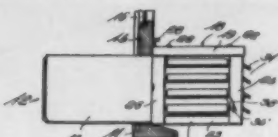
spaced upwardly from the floor and the lower longitudinal edge of said plate terminating adjacent the edge of the floor, an upper face plate disposed forwardly of and spaced from said back plate and extending downwardly from the lower edge of the wall, the upper edge of said upper face plate being in contact with the wall, a lower face plate extending upwardly from the floor and spaced forwardly of said upper face plate, whereby air from behind said face plates will be directed into the room through the space therebetween, and means for varying said last named space to control the amount of air passing therethrough.

2,780,980. ADJUSTABLE AIR DISTRIBUTION UNIT. Walter W. Kennedy, Rockford, Ill., assignor to Barber-Colman Co., Rockford, Ill., a corporation of Illinois. Application May 5, 1953, Serial No. 353,111. 4 Claims. (Cl. 98-40.)



1. An air distribution unit having, in combination, means defining a plurality of generally concentric annular air passages including an outer deflector and successively smaller intermediate and inner deflectors, angularly spaced bars extending generally radially of the outer deflector and having inner ends terminating adjacent the center of the unit and outer ends disposed adjacent said outer deflector, a member movable axially of said unit, pivot joints at the outer and inner ends of each of said bars connecting the same to said outer deflector and said member respectively for relative swinging about parallel axes normal to the axis of the unit, one of said joints including a slot elongated in a direction longitudinally of the bar, means intermedicate the ends of said bars pivotally connecting the same to said intermediate deflector and means for resisting flexing of the other of said joints comprising opposed surfaces surrounding the axis of such joint and carried by different parts thereof so as to turn relative to each other upon swinging of said bars, and spring means urging said surfaces toward each other.

2,780,982. COVER FOR AIR CONDITIONING UNIT. Grover C. Malone and Bert L. Malone, Memphis, Tenn. Application June 25, 1954, Serial No. 439,442. 2 Claims. (Cl. 98-94.)



1. A device of the character described comprising a top, a front wall, a pair of side walls, a series of louvers pivotally mounted in each of said walls, and means for selectively latching each series of louvers in open and closed position, said means comprising a flat latch for each wall, said latch pivoted at one end to its associated wall and adapted to selectively have its other end bear against the outer side of one of its associated louvers and to support the underside of one of its associated louvers when the latter is in open position.

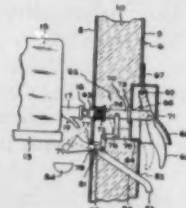
2,780,983. VOLUME CONTROL FOR REGISTERS. William C. De Roo, Holland, Mich., assignor to Hart & Cooley Mfg. Co., Holland, Mich., a corporation of Delaware. Application May 12, 1954, Serial No. 429,293. 9 Claims. (Cl. 98-110.)



1. A volume control device for regulating air movement through registers and the like comprising, a frame, a plurality of damper blades hollow throughout the length thereof and extending between opposed sides of said frame in parallel and adjacent relationship, pivot means mounting each of said blades for rotation about a longitudinal axis substantially midway between the edges thereof, and operating means extending into each blade

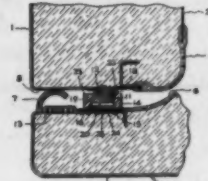
between the sides thereof for simultaneously rotating adjacent blades in opposite directions between open and closed positions.

2,781,153. LIQUID COOLER FOR REFRIGERATING APPARATUS. Edward H. Roberts, Jeffersonton, Ky., assignor to General Electric Co., a corporation of New York. Application Dec. 14, 1955, Serial No. 553,086. 2 Claims. (Cl. 222-183.)



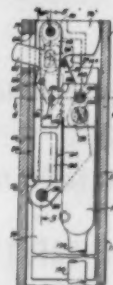
2. In a refrigerator having a storage compartment, a closure for said compartment, a liquid reservoir within said storage compartment, a plunger-actuated valve on said liquid reservoir, a fluid conducting pipe extending through said closure having a downwardly depending open end without said refrigerator, a stopcock within said fluid-conducting pipe rotatable to close said pipe, an upwardly extending funnel fixedly mounted on said stopcock, a plunger within said closure operable from without said refrigerator to actuate said reservoir valve, linkage means connecting said plunger to said funnel, biasing means for said plunger, said plunger movable against its biasing means to simultaneously actuate said reservoir valve, rotate said stopcock into pipe opening position, and pivot said funnel into fluid communicating relationship with said reservoir valve when said compartment is closed by said closure, said plunger movable by said biasing means to simultaneously rotate said stopcock into pipe closing position, pivot said funnel into a downwardly extending position to discharge liquid contained therein, and permit said plunger actuated valve on said reservoir to move into closing position.

2,781,216. MAGNETIC DOOR LATCH. Thomas P. Foley, Louisville, Ky., assignor to General Electric Co., a corporation of New York. Application Oct. 4, 1955, Serial No. 535,410. 4 Claims. (Cl. 292-251.5.)



1. A magnetic door latch for holding a door member in closing relation with a cabinet member, said latch comprising a permanent magnet and a non-magnetic housing for supporting said magnet on one of said members, a cooperating armature adapted to form a surface portion of the other of said members and to be contacted by said magnet when said door member is closed, said housing including a bottom wall and opposed upwardly converging side walls, said magnet being loosely disposed in said housing and including side walls adapted to be engaged by the walls of said housing to retain said magnet in said housing and limit the forward movement of said magnet away from said bottom wall, and a keeper on the opposite side of said bottom wall from said magnet and being adapted to cause said magnet to be attracted towards said bottom wall when out of contact with said armature.

2,781,218. LATCH FOR PANIC EXIT LOCK. Deane H. Jewett, Fraser, Mich., assignor to Detroit Hardward Mfg. Co., Detroit, Mich., a corporation of Michigan. Application Oct. 15, 1954, Serial No. 469,419. 6 Claims. (Cl. 292-336.)

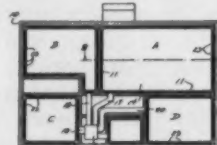


1. A panic exit lock latch unit for cooperating door and door frame structures comprising a latch unit supporting structure adapted to be mounted near the upper edge of said door structure, a latch bolt movably mounted on said supporting structure for movement between unlocked and locked positions below and above said upper edge respectively, a bolt-shifting member mounted on one of said structures for vertical reciprocation relatively thereto, motion-transmitting mechanism operatively connecting said member to said bolt and responsive to the downward reciprocation of said member to move said bolt upward into locking position above said upper edge, a detent catch mounted on said bolt-shifting member and reciprocable therewith, a detent movably mounted

on said supporting structure for travel into and out of detaining engagement with said catch in the raised position of said member, yielding means normally urging said detent into detaining engagement with said catch, and a detent actuator mounted on one of said structures operatively engaging and moving said detent out of detaining engagement with said catch in response to the closing engagement of said door structure with said door frame structure whereby to release said member and bolt.

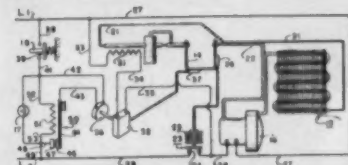
Week of Feb. 19

2,781,557. ACOUSTICAL AND AIR DISTRIBUTING CEILING CONSTRUCTION. Walter M. Ericson, Wauwatosa, Wis. Application Nov. 15, 1951, Serial No. 256,574. 12 Claims. (Cl. 20-4.)



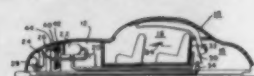
1. In an air circulation system, a plenum chamber having a room ceiling at its bottom provided with discontinuous apertures opening downwardly through said ceiling from said plenum chamber said apertures having an aggregate area adequate for normal ventilating requirements and not exceeding one per cent of the ceiling area and said apertures being in substantially uniform pattern of distribution throughout the ceiling area and of such size and spacing from each other that flow from the several apertures laps and merges closely below the ceiling as a descending blanket of air.

2,781,641. REFRIGERATION APPARATUS DEFROSTING CONTROL. William J. Foley, Midway Park, Pa., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Oct. 30, 1952, Serial No. 317,646. 5 Claims. (Cl. 62-4.)



1. In a refrigerator having a cabinet with an access opening therein, a door for opening and closing said opening, a cooling element for refrigerating media in said cabinet, refrigerating machinery for circulating refrigerant through said cooling element, means for heating said cooling element to remove frost therefrom, control mechanism for said heating means including a timer motor and means for energizing said heating means after a predetermined period of operation of said timer motor, a supply circuit for said timer motor, said supply circuit including first and second switches, said first switch being actuated to a closed position in response to opening of said door, and means in said supply circuit for measuring the individual periods of time during which said first switch is in its closed position and for opening said second switch in the event one of the closed periods of said first switch exceeds a predetermined interval of time.

2,781,642. AUTOMOBILE COOLING. James W. Jacobs, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application April 21, 1953, Serial No. 350,185. 13 Claims. (Cl. 62-4.)



1. In combination with a vehicle having and engine for supplying power for propelling the vehicle, said engine having an ignition system including a manually operable ignition switch and a clock operated ignition switch arranged in parallel, means cooperating with said engine for cranking said engine in response to closing of either of said switch, air conditioning apparatus supported on said vehicle including a refrigerant compressor, power transmitting means between said engine and said compressor, transmission means on said vehicle for propelling said vehicle by said engine, a control lever for said transmission means, and means operatively interconnecting said ignition system, said engine, and said control lever for preventing closing of said clock operated ignition switch in one position of said control lever.

2,781,643. APPARATUS FOR REFRIGERATING FOODSTUFFS. Starr W. Fairweather, Montreal West, Quebec, Can. Application Jan. 19, 1953, Serial No. 331,768. 4 Claims. (Cl. 62-87.)

2. In an apparatus for packing foodstuffs requiring a specific temperature, including a portable container defining an air-tight compartment, a re-

(Continued on next page)

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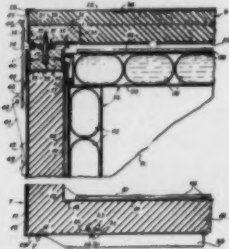
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PATENTS

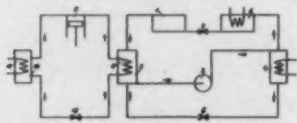
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movable liner for said compartment said liner comprising a plurality of separable hollow slabs, each of said slabs comprising top, bottom and side walls, a plurality of expansible tubular sections disposed within said slab in



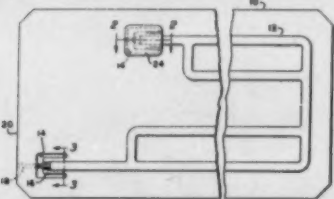
side-by-side relation between two opposing sides of the slab and an eutectic mixture sealed within said tubular sections whereby freezing of said eutectic mixture expands the tubular sections to substantially fill the interior of said slab.

2,781,644. METHOD FOR OPERATING AN ABSORPTION REFRIGERATING SYSTEM. Vsevolod Saposnikov, Prague-Podil, and Miroslav Patman, Prague-Stresovice, Czechoslovakia, assignors to VSCHP, Vyskumny ustav stroju chladicich a potravinarskych, Prague, Czechoslovakia. Application Nov. 9, 1954, Serial No. 467,848. Claims priority, application Czechoslovakia Nov. 11, 1953, 3 Claims. (Cl. 62-119.)



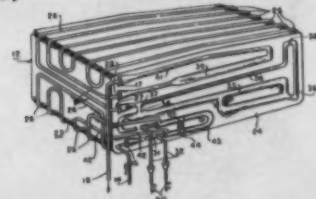
1. In the method of absorption cooling with a two component, ammonia-water refrigerant in a cooling plant wherein ammonia is evaporated in an evaporator within the space to be cooled and is thereafter absorbed by a weak aqueous solution of ammonia in an absorber to produce a strong solution which is pumped to a generator where ammonia is separated from the weak solution for return of the latter to the absorber while the separated ammonia is fed through a condenser and an expansion valve to the evaporator; the further step of cooling the aqueous solution of ammonia in the absorber to a temperature below that at which solidification of said solution occurs so that ice is frozen out of said solution for obtaining a low evaporating temperature of the refrigerant up to minus 70° centigrade and a high initial cooling performance.

2,781,645. HEAT EXCHANGER. Edward C. Simmons, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Sept. 17, 1952, Serial No. 310,006. 5 Claims. (Cl. 62-126.)



2. A heat exchanger comprising a roll formed element having an internal passage formed therein, said passage having a terminus arranged at a point inside the outer periphery of said roll formed element and comprising a tongue portion struck away from the roll formed element, said passage extending to an edge portion of said tongue, and a conduit connected to said tongue portion and having a passage communicating with said internal passage.

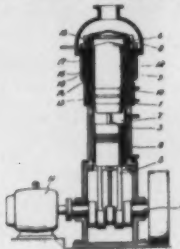
2,781,646. EVAPORATOR DEFROSTING ARRANGEMENT. Leslie B. M. Buchanan, Wilbraham, Mass., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Dec. 11, 1953, Serial No. 397,530. 4 Claims. (Cl. 62-126.)



2. An evaporator provided with a refrigerant passage having an inlet and an outlet, and means for defrosting said evaporator by the application of heat to but portions of said refrigerant passage, which portions constitute substantially less than the total length of the refrigerant passage, and by the circulation of heated refrigerant within said evaporator passage, said evaporator passage having two portions thereof arranged in closely spaced relationship, one of said portions being adjacent the inlet of the evaporator passage and the other of said portions

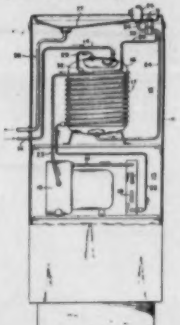
being intermediate the inlet and outlet of the evaporator passage and being downstream of said first portion a distance sufficient to receive refrigerant which has previously been evaporated in said first passage portion and recondensed in a third portion of the passage intermediate said first and second portions, said heat applying means comprising a single heater disposed in heat-exchange relationship with both said first and second portions of the evaporator passage.

2,781,647. COLD-GAS REFRIGERATOR. Jacob Willem Laurens Kohler and Aldert Teunis Bloem, Emmasingel, Eindhoven, Netherlands, assignors to Hartford National Bank & Trust Co., Hartford, Conn., as trustees. Application Dec. 30, 1954, Serial No. 478,696. Claims priority, application Netherlands Jan. 20, 1954. 5 Claims. (Cl. 62-136.)



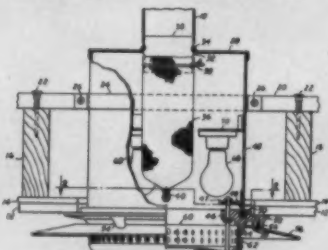
1. A cold-gas refrigerator comprising: a cylinder; a piston reciprocating in said cylinder; a chamber of relatively low temperature; a chamber of relatively high temperature; a freezer, a regenerator, and a cooler connected in series and communicating said chambers with each other; the volume of each space being varied by said reciprocating piston while a medium which is always in the same state of aggregation in the refrigerator performs a closed thermodynamic cycle therein; the wall of said cylinder being constituted of at least two portions abutting each other at adjacent ends and meeting at a point coextensive with the juncture of the cooler and the regenerator, one of said portions serving as a running surface for said piston and the other portion being the inner boundary wall of said regenerator.

2,781,648. WATER COOLER APPARATUS. Wallace R. Lyman, Springfield, Mass., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa., a corporation of Pennsylvania. Application March 8, 1955, Serial No. 492,863. 5 Claims. (Cl. 62-141.)



1. In liquid cooling apparatus, the combination of a tank adapted to contain liquid to be cooled, a liquid supply pipe communicating with said tank, a liquid delivery pipe communicating with the lower portion of said tank, a refrigerant heat exchanger associated with said tank for cooling the contents thereof, and an air purge tube having one end thereof in communication with the top of said tank and the other end thereof in communication with said delivery pipe, said purge tube having a portion thereof in engagement with said refrigerant heat exchanger for cooling the fluid flowing therethrough.

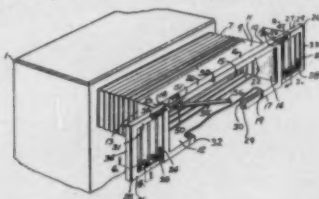
2,781,715. AIR DIFFUSING DEVICE. Otto A. Labus, La Crosse, Wis., assignor to The Trane Co., La Crosse, Wis. Application May 11, 1953, Serial No. 353,961. 3 Claims. (Cl. 98-40.)



1. A diffuser for discharging air into a conditioned space comprising an enclosure having a flange and being adapted to be mounted in a hole in the wall or ceiling of the conditioned space with a surface of the flange abutting the wall or ceiling, and with a portion of said enclosure extending outwardly into said conditioned space, said enclosure being adapted to be secured in air flow communication with a duct having air under pressure, a tubular porous cloth member in said enclosure having an open end secured in air flow communication with said duct, means for closing said tubular member at a point spaced from said open end, said outwardly extending portion of said enclosure having a plurality of closely spaced nozzles for dis-

charging air from said enclosure, the axes of said nozzles being substantially parallel to said surfaces of said flange which is adapted to abut the wall or ceiling.

2,781,717. WINDOW UNIT FOR USE WITH AIR CONDITIONERS. Paul E. Hord, Tebbetts, Mo. Application May 26, 1954, Serial No. 432,427. 6 Claims.



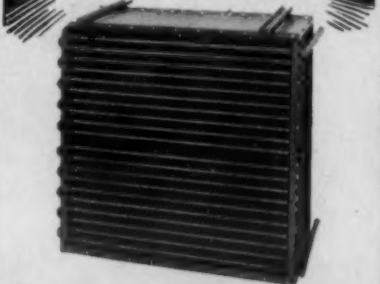
5. A window unit for use with an air conditioner wherein the unit is mounted in a window opening comprising, a hollow substantially rectangular shell of a width less than the width of the window opening and having trackway housings on the upper and lower portions of the shell and extending across the width thereof, U-shaped extension frames having a vertical member connected to parallel legs arranged at the ends of the shell with the legs slidable in the trackway housings for movement of the extension frames toward and away from the shell, said legs having inwardly facing channels therein, an extensible panel member in each of the extension frames and having end portions secured to the shell and to the vertical member of the extension frames remotely of the shell respectively, said extensible panel members having a plurality of vertical folds therein defining a plurality of vertically extending panel portions, hinge means connecting adjacent edges of adjacent panel portions to form a hinged connection therefor, means in the panel portions providing vertical rigidity thereto, said panel portions extending into the channels of the legs of the extension frames, cooperative means in the channels of the legs of the extension frames and the panel portions extending therein retaining said panel portions against relative hinging movement when the extension frames are in selected extended position, and resilient means engaging the panel portions and legs of the extension frames to form a substantially weathertight seal therebetween.

2,781,912. DRIER-FILTER. Kenneth M. Newcum, Xenonople, Pa. Application March 1, 1954, Serial No. 412,986.

1. A filter-drier of the type having an elongated casing with inlet and out-



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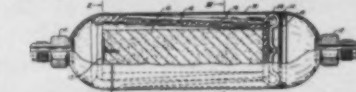
LARKIN AIR COOLED CONDENSER

The acid test of any product is performance. That's why you will find Larkin products used so widely for so many different refrigeration and air-conditioning applications. Users know from past experience that they can count on Larkin for top performance—day in, day out—year in, year out.

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let fittings, the improvement which comprises: an elongated one-piece body of water-absorbing material forming a drier element, a filter bag of fiberglass having an open end facing the inlet fitting, the filter bag being otherwise

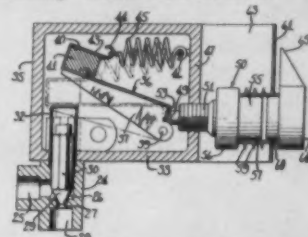


completely closed and surrounding the drier element on all sides except at the inlet end, the inlet end of the drier element being spaced from the casing by the filter bag and being supported solely by the filter bag and the contact of the filter bag with the casing the fiber glass of the filter bag serving to protect and cushion the drier element against direct contact with other parts of the device.

2,781,979. THERMO-MAGNETIC REFRIGERANT VALVE. El Roy Kraft, Des Plaines, Ill., assignor to The Dole Valve Co., Chicago, Ill., a corporation of Illinois. Application July 13, 1955, Serial No. 521,749. 6 Claims. (Cl. 238-48.)

1. In a refrigerant shut-off valve particularly adapted to shut-off the flow of refrigerant in a secondary refrigerant loop of a dual temperature refrigerator, a valve body having a central valve chamber, an inlet leading into said chamber and an outlet leading therefrom, a metallic valve biased by gravity to block the passage of refrigerant from said inlet to said outlet, a housing extending from said valve body and having said valve movable therein, an arm pivotally mounted in said casing for movement

toward and from said valve, at least an outer portion of which is magnetic, a thermal element having a cylinder extending within said housing, a cas-



ing on the outside of said housing and a piston extensible from the cylinder into engagement with said arm upon predetermined rises in temperature, for moving said arm toward said valve to envelope said valve with the magnetic field of said arm and effect opening thereof, and a spring having connection with said arm for biasing said magnet away from said valve to accommodate said valve to close by gravity, and for retractably moving said piston within said cylinder.

(To Be Continued)

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POSITIONS WANTED

FIELD SERVICE engineer—Sixteen years' experience as serviceman, last two years traveled New York state and New England for Hussmann. Now living in Albany, will move if necessary at your expense. Have 1957 Ford. Reference any past employer. CLARENCE WILMORE, 14A Old Hickory Drive, Albany, New York, Phone 3-0244.

AIR CONDITIONING and refrigeration engineer returning to U.S.A. after five years' foreign contracting experience. Seven years' export service. Age 32, college graduate B.S.M.E. Wish to settle in Southeast. Good knowledge system design, estimating, selling and installation. Available in July. BOX A5792, Air Conditioning & Refrigeration News.

DESIRE A change: Offering eighteen years of air conditioning "know how" in all phases of selling, engineering and application. Would like to discuss arrangement for building a future based on ability to get results. Age forty, married, one child. Presently employed as sales manager for packaged unit distributor. Will relocate. BOX A5795, Air Conditioning & Refrigeration News.

IF YOU need a man with an excellent background and fully experienced in managing the service and installation of air conditioning and refrigeration of all sizes and application, I will meet you at your expense in Washington, D. C. or nearby city. Write BOX A5796, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

WANTED—DISTRICT sales supervisors to be located in the New York Metropolitan area, in the South, and in San Francisco to supervise sales offices of manufacturer of heating, cooling, and air conditioning equipment. Send complete information regarding education, experience, and salary requirements to the Personnel Manager, YOUNG RADIATOR COMPANY, 709 South Marquette Street, Racine, Wisconsin.

WANTED: MANUFACTURER'S commercial and industrial air conditioning equipment salesman for New York City area. Must be graduate engineer with several years' selling experience and have a following in the industry. Good salary plus P.S. Plan. TELEPHONE: OXford 7-3758, New York City.

SALESMEN WANTED—To sell commercial barbecue equipment to wholesalers—dealers—supermarkets. \$1,000.00 or more per month, commissions easily obtainable. Write BOX A5781, Air Conditioning & Refrigeration News.

CENTRAL NEW YORK Carrier dealer needs sales engineer to survey, design

and negotiate jobs up to 150 tons. No canvassing. Permanent position. Good starting salary with increases based on ability to get things done. All replies confidential. BOX A5790, Air Conditioning & Refrigeration News.

WANTED—SALES application engineers: Mechanical engineering graduates for sales application engineering work in heating and air conditioning by prominent Midwest manufacturer. Reply in confidence giving details of education, experience, photo, and salary requirements to BOX A5793, Air Conditioning & Refrigeration News.

MANUFACTURER'S REPRESENTATIVE for Baltimore Washington area to sell our residential air conditioning units on a liberal commission basis. Units have many outstanding features and are attractively priced. Some other territories also available. Write BOX A5794, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED: MANUFACTURER'S surplus, outdated or obsolete refrigeration items—expansion & water & shutoff valves, controls, relays, dehydrators, units, tubing, fittings, etc. All sales on a cash close-out basis, large or small quantity. Write or call: COMMERCIAL CONTROLS CO., 257 East 3rd Street, N. Y. 9, N. Y., ORegon 3-7210.

EQUIPMENT FOR SALE

BRAND NEW in original cartons 260 Tecumseh sealed refrigeration units, compressor motor 1/4 h.p., evaporator condenser, model numbers HL-199, HL-201, and HL-204. Will sell entire lot at a bargain price. AMCO MACHINERY COMPANY, 125 Lieb Street, Detroit 7, Michigan, Phone LOrain 7-1070.

ATTENTION: OWNERS of Baker compressors and condensers. We carry complete stock of repair parts for all Baker ammonia and Freon compressors and condensers. Valves and ice plant equipment. CENTRAL ICE MACHINE COMPANY, 5014 South 24th Street, Omaha, Nebraska.

NATIONALLY-FAMOUS brand-new condensing units at sensationally low prices. 1/4 h.p. only \$34.50. Other sizes up to 1/2 h.p. at equally great savings. Also tremendous values in motor compressor domes. 1/4 hp only \$31.00 Complete selection of sizes up to 1 1/2 h.p. All units fully guaranteed. Write for complete description and price list. MANN REFRIGERATION SUPPLY CO., 440 Lafayette Street, New York 3, N. Y. GRamercy 3-8000.

CENTRAL HOME air conditioners: 1 1/2 h.p. self contained \$200. 1 1/2 h.p. remote \$200. 2 h.p. remote \$275. Remote units with condensing section and evaporator coil assembly for furnace plenum. Air cooled. New in original crates. Quantities limited. Write today. BOX A5791, Air Conditioning & Refrigeration News.

MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR, 2533 Lincoln Avenue, Chicago 13, Illinois.

NBBB Asks Mfrs. To Correct Ads--

(Concluded from Page 1, Col. 3) is used in pre-ticketing or in national advertising, or in advertising furnished to distributors or dealers, it should be the regular or customary price for which the appliances so pre-ticketed or otherwise advertised, are sold at retail in the usual course of business.

In placing responsibility for fictitious list prices on manufacturers, the National Better Business Bureau stated:

"A manufacturer who puts an inflated list price, or an inflated 'suggested' list price, on an appliance enables a dealer to represent that the difference between his selling price and the inflated list price is a 'saving.'"

"This practice places in the hands of the dealer a means to deceive the public, and the manufacturer, therefore, is equally culpable with the dealer who makes the false price comparison."

"Manufacturers may attempt to rationalize this practice because of a trade custom, competition dealer demand, or for other reasons, but we consider it deceptive, dishonest, and unworthy of American business."

Noting that the Federal Trade

Commission has the authority to order discontinuance of deceptive price comparisons, the NBBB made clear its desire to correct the problem through voluntary procedures. However, it advised manufacturers frankly that:

"This is a showdown effort on the part of the Better Business Bureaus to solve the problem of the dishonest price comparison through voluntary self-regulation."

Willson stated that major appliance manufacturers also have been asked to go on record with the National Better Business Bureau as to whether they favor solving the problem of fictitious list prices through voluntary regulation, and whether they are currently operating in accordance with, or are willing to adopt and apply the bureau's recommendations.

Gas Industry To Push Cooling--

(Concluded from Page 1, Col. 4) to place more emphasis on systems for gas air conditioning which could be brought to market at the earliest possible moment."

Thus the program intensification is devoted to developing laboratory test or prototype equipment for test at the earliest possible moment, most of it by the end of the current year. The work proposed includes not only research projects that have been carried on by AGA but also includes aid to manufacturers primarily to the end of saving time. A limited number of projects that will be of direct aid to manufacturers will also be continued.

In reviewing work of the PAR Air Conditioning Task Force, the AGA announcement noted, among other things, that in 1954 conferences were initiated

with individual manufacturers who were known to be engaged or potentially interested in air conditioning with the idea of encouraging their efforts or entrance into this field.

"Important progress was made by several manufacturers without, however, a marketable prototype having been produced up to this time," it was pointed out. "Unfortunately two manufacturers were unable, for business reasons, to carry on their research programs as planned and the AGA now has undertaken to continue or aid these developments."

The Rheem Mfg. Co., it was stated, had scheduled its jet unit for test in 1957 and in order to save time AGA and Rheem have agreed to a cooperative program in which six test units will be built and operated to aid development work

during the remainder of this year.

The Coleman Co. has agreed to turn over development in its engine conditioner field as well as other research to AGA, according to the organization's report.

The Coleman program, it was explained, consisted of developmental work in conjunction with the Onan Co., open wet cycle work with I.G.T., and work on jet fluids.

AGA accepted Coleman's offer and these projects have been included in the intensified program.

"In turning over all results of this work to AGA, Coleman also relinquished any exclusive rights to a successfully developed unit, so that any reputable manufacturer will be able to utilize the results of AGA research on these projects in the building and marketing of gas air conditioning equipment," it was pointed out.

UsAirco Merger--

(Concluded from Page 1, Col. 3) company \$1,450,000 to help "relieve its debt burden," UsAirco revealed. In recommending the merger to shareholders, directors asserted:

"The severe losses of the past two years brought your corporation to the most critical days of its history, reducing working capital to an alarmingly inadequate figure and posing a serious threat to its continuation in business."

Under the merger plan, the surviving company—UsAirco—will have 20 million authorized shares of new common stock of which 10,351,090 "are expected to be issued upon consummation of the merger."

Approval of holders of two thirds of the outstanding stock of each firm is required for completion of the merger. But, the proxy points out, UsAirco's management reserves the right to "abandon" the plan if more than 20% of holders object.

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PRESSURE GAUGES and Dial Thermometers for all services.

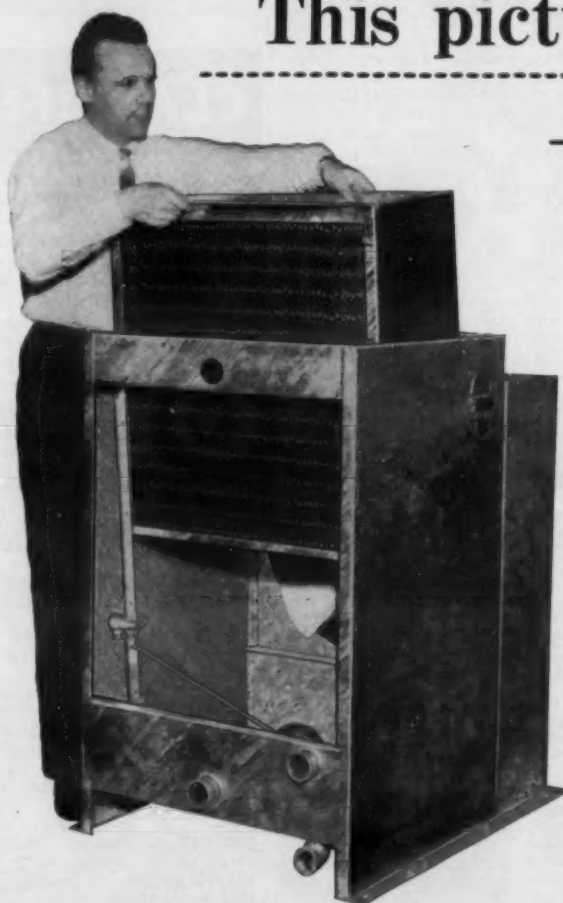
MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.

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PRODUCT MANAGER

Ame Industries, Inc. needs a man with engineering and sales experience in heat transfer equipment to fill a newly created staff position as product manager. Responsibilities will include coordinating the activities of sales, engineering and manufacturing departments on this product line. Salary commensurate with experience plus additional company benefits.

For personal interview write to W. R. Elchelberger, Vice President and Director of Sales, Ame Industries, Inc., Jackson, Mich. All replies held in strictest confidence.



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This man is lifting 515 square feet of highly efficient deck surface... a 37-pound capsule of concentrated cooling capacity that is the heart of this 7½-ton tower. It's the new plastic pak* developed exclusively by Acme Industries, and it tells the story why these new FLOW-COLD towers are the smallest and lightest in their field by an unbelievable margin. This 7½-ton tower, for example, takes less than 24 cubic feet of space and weighs a mere 300 pounds. Other leading makes take up to twice this space and weigh more than twice as much!

But that's not all. With the Acme-Pak, you not only get far more wetted surface, but a more effective surface as well. These molded plastic sheets are dotted with thousands of turbulators and "spreader" ribs that control air turbulence and water flow to achieve maximum heat transfer.

Remember too the Acme-Pak cannot rot nor rust like other materials. It's made of chemically inert polystyrene that no amount of water can damage in a lifetime.

*Patent Applied For

PLUS these other Flow-Cold features to sell and serve your customer:

controlled water distribution without nozzles

Another Acme exclusive consists of plastic water-dispersal troughs on the underside of the pan that channel water in equal quantities to the multiple spaces between pak sheets.

easy access to all parts

The sump, pak, and distribution pan are all easily reached by removing the top cover and front grill piece. Self-contained pak slides completely out if necessary.

housing never needs painting

The welded steel housings of FLOW-COLD Towers are hot-dip galvanized for year-round protection that never needs painting.

unequalled compactness and good looks

Flush grill guards on front and rear lend a modern functional look to these new towers. They're smaller too. Compared with other tower makes, Flow-Cold is in a size class by itself.



TO SEE HOW FLOW-COLD SAVES THREE WAYS FOR YOU... WITH LOWER UNIT COST, LESS FREIGHT, LONGER TROUBLE-FREE SERVICE... WRITE TODAY FOR CATALOG NO. 371.



Acme INDUSTRIES INC. Jackson, Michigan



Dry-Ex Liquid Chillers



Liquid Receivers



Heat Exchangers



Condensers



Packaged Chillers



Packaged Heat Pumps



Evaporative Condenser & Cooling Towers



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